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MANUAL OF PROPERTIES
OF
COMBINED BEAM AND PLATE

PART I

TEES AND ANGLES

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COMBINED BEAM AND PLATE

PART I

TEES AND ANGLES

Coordinated by the Society of Naval Architects and Marine Engineers for the Maritime Administration, U. S. Department of Commerce, and the Bureau of Ships, Department of the Navy

For Sale by Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.
Order No. PB 171471 - Price $12 Set (Parts I-II)

Foreword

This Manual is the result of the combined efforts of the Maritime Administration, U. S. Department of Commerce; the Bureau of Ships, Department of the Navy; and the Hull Structure Committee (S-12 Panel) of the Society of Naval Architects and Marine Engineers.

The Society of Naval Architects and Marine Engineers coordinated the program, and the computations were made under the direction of the Ship Design Division, Bureau of Ships, Department of the Navy, using the facilities of the David Taylor Model Basin.

This publication was made possible by the Office of Technical Services of the Department of Commerce in conjunction with the Maritime Administration.

While the information contained herein was developed primarily for the use of the shipbuilding industry, it is of value to the structural industry as a whole, when it is desired to take advantage of the weight-saving which results from the elimination of the faying flanges of stiffening members by the welding of webs directly to plating.

Part I covers stiffener and plate combinations using commercially available shapes. Part II covers combinations using flanged plates whose dimensions are beyond those of commercially available angles and channels.

Part I

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INTRODUCTION

1. SCOPE:

These tables are intended to be used in the design of ship structure where the plate is considered acting as one of the flanges of the attached member.

2. SHAPES INCLUDED:

a. The steel shapes selected for inclusion in the tables are those produced as or cut from U. S. commercial standards. The sizes were chosen after an investigation of actual and future needs.

b. Properties indicated in these tables are for rolled or extruded shapes. These are produced by one of the following methods:

2b.1 By cutting off two sides of one flange of an I-beam to within 1/8" of the web, one tee can be made having the same depth as the original beam (indicated as an I cut to a tee or I-T).

2b.2 By cutting through the middle of the web of an I-beam to make two tees having a depth of one-half that of the original beam (indicated as a T).

2b.3 By cutting off one flange of a channel to within 1/8" of the web, an angle can be made having the same depth as the original section (indicated as a channel cut to an angle or [-L).

3. EFFECTIVE BREADTH OF PLATING:

The selection of an effective breadth of plating to be assumed to be acting in association with any shape is influenced by the yield strength and the modulus of elasticity of the material. This is calculated by the formula $2\sqrt{E/F_y}\,t$ where E is the modulus of elasticity (p.s.i.), Fy is the tensile yield strength (p.s.i.) and t is the thickness (in.) of the plate. If the plating and beams have different yield strengths, the lower value yield strength is used in the formula.

The values for effective breadth of plating have been selected as 60t, 50t, 40t, and 30t. These approximate the actual values of MS (60t), HTS (51t), HY80 (39t) and facilitate interpolation when the spacing between stiffeners is smaller than the effective breadth of the plate.

These tables apply only if the calculated stiffener spacing is equal to or greater than the effective breadth of plating. Where the stiffener spacing is less than an effective breadth of 30t, equivalent plating having the required area can be used by selecting an appropriate thickness. The latter method will result in only a negligible error for most cases.

4. SYMBOL NOMENCLATURE AND DEFINITIONS:

Weight per Foot = Weight per foot of shape only (after it is cut) in pounds per foot.

Section Modulus--Lesser = Minimum section modulus in inches cubed (either to the flange or to the plate).

Section Modulus--Greater = Maximum section modulus in inches cubed (either to the flange or to the plate).

I = Inertia of the shape and plate combined in inches to the fourth power.

r = Radius of gyration of shape and plate combined in inches.

Area = Area of shape only in inches squared.

Y-F = Distance, neutral axis to the flange in inches.

Y-P = Distance, neutral axis to the plate in inches.

Beam Depth = Depth of beam to the plate in inches.

Flange Width = Width of flange in inches.

Flange Thickness = Actual thickness or average thickness for tapered flanges in inches.

Shear Area = Shear area of shape only (depth of beam times thickness of web) in inches squared.

5. PART II COVERS SIMILAR TABLES FOR FLANGED PLATES ATTACHED TO PLATING.

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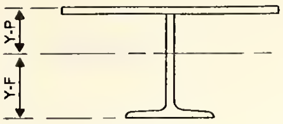
EFFECTIVE BREADTHS AND EQUIVALENT AREAS

Plate			60 t		50 t		40 t		30 t	
Lbs./Ft.^{2}	Decimal	Fraction	Breadth	Area	Breadth	Area	Breadth	Area	Breadth	Area
	In.	In.	In.	In.^{2}	In.	In.^{2}	In.	In.^{2}	In.	In.^{2}
5.1	0.125	1/8	7.50	0.94	6.25	0.78	5.00	0.63	3.75	0.47
6.37	0.1563	5/32	9.37	1.46	7.81	1.22	6.25	0.98	4.69	0.73
7.65	0.1875	3/16	11.25	2.11	9.38	1.76	7.50	1.41	5.63	1.05
8.925	0.2188	7/32	13.12	2.87	10.94	2.39	8.75	1.91	6.56	1.44
10.2	0.25	1/4	15.00	3.75	12.50	3.13	10.00	2.50	7.50	1.88
11.475	0.2813	9/32	16.87	4.75	14.06	3.96	11.25	3.16	8.44	2.37
12.75	0.3125	5/16	18.75	5.86	15.63	4.88	12.50	3.91	9.38	2.93
14.025	0.3438	11/32	20.62	7.09	17.19	5.91	13.75	4.73	10.31	3.54
15.3	0.375	3/8	22.50	8.44	18.75	7.03	15.00	5.63	11.25	4.22
17.85	0.4375	7/16	26.25	11.48	21.88	9.57	17.50	7.66	13.13	5.74
20.4	0.50	1/2	30.00	15.00	25.00	12.50	20.00	10.00	15.00	7.50
22.95	0.5625	9/16	33.75	18.98	28.13	15.82	22.50	12.66	16.88	9.49
25.5	0.625	5/8	37.50	23.44	31.25	19.53	25.00	15.63	18.75	11.72
28.05	0.6875	11/16	41.25	28.36	34.38	23.63	27.50	18.91	20.63	14.18
30.6	0.75	3/4	45.00	33.75	37.50	28.13	30.00	22.50	22.50	16.88
35.7	0.875	7/8	52.50	45.94	43.75	38.28	35.00	30.63	26.25	22.97
40.8	1.00	1.0	60.00	60.00	50.00	50.00	40.00	40.00	30.00	30.00
45.9	1.125	1 1/8	67.50	75.94	56.25	63.28	45.00	50.63	33.75	37.97
51.0	1.25	1 1/4	75.00	93.75	62.50	78.13	50.00	62.50	37.50	46.88
56.1	1.375	1 3/8	82.50	113.44	68.75	94.53	55.00	75.63	41.25	56.72
61.2	1.50	1 1/2	90.00	135.00	75.00	112.50	60.00	90.00	45.00	67.50
71.4	1.75	1 3/4	105.00	183.75	87.50	153.13	70.00	122.50	52.50	91.88
81.6	2.00	2.0	120.00	240.00	100.00	200.00	80.00	160.00	60.00	120.00
91.8	2.25	2 1/4	135.00	303.75	112.50	253.13	90.00	202.50	67.50	151.88
102.0	2.50	2 1/2	150.00	375.00	125.00	312.50	100.00	250.00	75.00	187.50
112.2	2.75	2 3/4	165.00	453.75	137.50	378.13	110.00	302.50	82.50	226.88
122.4	3.00	3.0	180.00	540.00	150.00	450.00	120.00	360.00	90.00	270.00
132.6	3.25	3 1/4	195.00	633.75	162.50	528.13	130.00	422.50	97.50	316.88
142.8	3.50	3 1/2	210.00	735.00	175.00	612.50	140.00	490.00	105.00	367.50



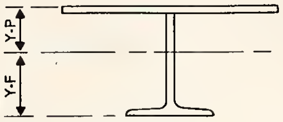
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 11 3/4 x 105 I-T	71.22	70.6	161.4	905.8	6.43	5.6	12.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	65.2	148.0	827.6	6.42	5.6	12.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	66.1	128.7	805.3	6.56	6.3	12.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	60.4	117.4	728.9	6.56	6.2	12.1	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	55.6	106.9	663.0	6.54	6.2	11.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	51.7	98.3	609.4	6.54	6.2	11.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	52.9	91.8	616.1	6.68	6.7	11.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	49.4	84.0	567.5	6.66	6.8	11.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	45.9	76.7	520.2	6.67	6.8	11.3	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	54.1	105.7	588.5	5.86	5.6	10.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	49.8	96.5	534.8	5.85	5.5	10.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	45.6	87.4	483.3	5.84	5.5	10.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	42.2	79.5	440.8	5.84	5.5	10.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	41.0	69.7	422.2	6.04	6.1	10.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	37.8	63.0	383.7	6.04	6.1	10.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	34.7	56.7	346.9	6.06	6.1	10.0	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	32.7	50.2	316.2	6.02	6.3	9.7	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	34.0	66.5	316.7	5.21	4.8	9.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	31.7	60.7	290.0	5.22	4.8	9.1	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	29.4	54.7	263.8	5.23	4.8	9.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	29.0	48.2	258.3	5.39	5.4	8.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	27.0	43.3	235.2	5.39	5.4	8.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	25.2	37.9	211.8	5.38	5.6	8.4	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	39.1	96.6	382.8	4.65	4.0	9.8	16.77	13.64	10.07	0.932	7.77
51 T	51.03	39.4	95.4	380.8	4.89	4.0	9.7	15.01	13.53	10.02	0.827	7.01
47 T	47.02	34.5	81.0	328.2	4.71	4.1	9.5	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	32.2	95.2	295.7	3.99	3.1	9.2	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	30.0	72.9	260.6	4.20	3.6	8.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	27.9	66.0	238.6	4.24	3.6	8.6	12.35	12.04	9.01	0.772	5.65
x 38 T	38.01	26.4	59.9	221.4	4.27	3.7	8.4	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	27.8	55.7	228.0	4.58	4.1	8.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	25.7	50.5	207.4	4.58	4.1	8.1	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	23.6	45.6	187.8	4.61	4.1	7.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	23.5	40.7	184.1	4.72	4.5	7.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	21.3	35.6	162.7	4.74	4.6	7.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	19.7	31.3	146.0	4.75	4.7	7.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	19.9	24.3	136.2	4.81	5.6	6.8	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	18.4	21.0	120.3	4.77	5.7	6.5	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	17.1	17.7	105.2	4.69	6.0	6.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	15.2	15.8	93.4	4.69	6.1	5.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	12.7	14.3	81.7	4.71	6.4	5.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	22.2	51.3	166.6	3.78	3.2	7.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	21.3	48.3	158.3	3.80	3.3	7.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	20.3	44.3	147.6	3.83	3.3	7.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	16.8	31.4	108.0	3.82	3.4	6.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	17.2	28.1	110.4	4.02	3.9	6.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	15.7	24.5	97.7	4.04	4.0	6.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	14.5	20.3	84.7	4.00	4.2	5.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	15.1	18.3	85.8	4.10	4.7	5.7	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	14.2	16.0	77.1	4.05	4.8	5.4	3.77	10.12	4.01	0.329	2.42



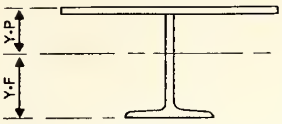
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
10 x4 x 15 I-T	11.55	13.4	13.9	69.1	3.99	5.0	5.2	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	11.0	12.0	57.2	4.01	5.2	4.8	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	8.6	11.5	49.8	4.00	5.8	4.3	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	20.2	63.4	142.4	2.95	2.2	7.0	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	17.9	47.1	119.6	3.12	2.5	6.7	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	16.6	37.4	106.5	3.30	2.8	6.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	15.9	34.8	100.3	3.33	2.9	6.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	15.1	32.1	93.8	3.36	2.9	6.2	7.35	9.00	7.50	0.570	3.22
8 x7 x 25 T	24.99	13.3	28.9	75.2	3.01	2.6	5.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	12.6	26.4	69.9	3.04	2.6	5.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	11.9	24.2	64.7	3.08	2.7	5.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	11.5	21.5	60.4	3.09	2.8	5.3	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	12.5	22.2	65.5	3.21	3.0	5.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	11.5	19.4	58.2	3.23	3.0	5.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	11.4	16.2	55.2	3.33	3.4	4.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	10.6	13.7	48.4	3.31	3.5	4.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	10.6	11.8	46.1	3.31	3.9	4.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	9.9	10.1	40.7	3.27	4.0	4.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.2	9.0	34.4	3.32	4.2	3.8	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.3	8.1	26.1	3.25	4.9	3.2	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	9.9	20.3	47.9	2.71	2.4	4.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	9.6	18.6	45.1	2.76	2.4	4.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	9.2	16.4	41.6	2.79	2.5	4.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	7.7	8.3	28.6	2.87	3.4	3.7	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.0	6.7	17.8	2.85	4.5	2.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	8.2	17.3	34.6	2.36	2.0	4.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	7.7	15.4	31.5	2.40	2.1	4.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	7.3	13.7	29.1	2.43	2.1	4.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	8.0	10.1	28.3	2.60	2.8	3.6	3.26	6.24	4.03	0.404	1.62
11 T	11.02	7.5	10.2	27.0	2.54	2.7	3.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	7.1	8.7	24.3	2.54	2.8	3.4	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	7.0	7.4	22.0	2.53	3.0	3.2	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	6.8	7.3	21.5	2.53	3.0	3.2	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.3	6.5	19.4	2.54	3.1	3.0	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.4	6.2	17.1	2.51	3.2	2.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.1	6.2	17.2	2.54	3.4	2.8	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	2.8	5.4	11.5	2.44	4.0	2.1	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	6.2	12.0	21.5	2.03	1.8	3.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	5.9	10.6	19.6	2.06	1.9	3.3	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	5.7	8.9	17.6	2.09	2.0	3.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	5.8	7.7	17.5	2.16	2.3	3.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	5.6	6.7	15.9	2.16	2.4	2.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	5.4	5.8	14.4	2.14	2.5	2.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.6	5.1	12.2	2.15	2.7	2.4	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.4	4.8	10.3	2.14	3.0	2.1	1.32	5.00	2.68	0.204	0.77
4 x 4 x 7.5 T	7.55	4.3	5.0	9.7	1.75	1.9	2.3	2.22	4.06	4.01	0.314	0.99



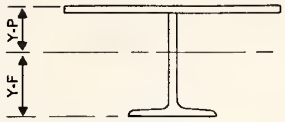
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOOULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 4 x 6.5 T	6.49	4.1	4.3	8.7	1.75	2.0	2.1	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.5	3.9	7.5	1.76	2.1	1.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.1	3.6	5.5	1.71	2.6	1.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.6	3.1	3.9	1.49	2.4	1.3	0.80	3.50	2.08	0.175	0.44
3 x 4 x 6 T	6.02	3.0	3.2	4.8	1.33	1.5	1.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.3	2.7	3.8	1.33	1.6	1.4	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	2.5	2.5	1.25	2.2	1.0	0.65	3.00	1.84	0.167	0.34

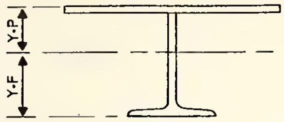


PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 11 3/4 x 105 I-T	71.22	78.8	167.4	989.5	6.65	5.9	12.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	73.3	153.8	909.4	6.64	5.9	12.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	74.1	133.6	880.4	6.77	6.6	11.9	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	68.3	122.2	802.6	6.78	6.6	11.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	63.5	111.4	734.6	6.77	6.6	11.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	59.6	102.7	679.1	6.78	6.6	11.4	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	60.8	95.9	684.1	6.91	7.1	11.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	57.2	87.9	633.5	6.90	7.2	11.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	53.7	80.4	584.2	6.91	7.3	10.9	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	61.2	110.1	648.2	6.06	5.9	10.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	56.9	100.7	592.9	6.06	5.9	10.4	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	52.7	91.3	539.6	6.06	5.9	10.2	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	49.2	83.3	495.3	6.07	5.9	10.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	48.0	73.1	475.1	6.26	6.5	9.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	44.8	66.2	434.8	6.27	6.6	9.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	41.6	59.6	396.2	6.31	6.6	9.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	39.6	52.9	362.1	6.26	6.8	9.2	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	40.3	69.8	359.8	5.44	5.2	8.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	37.9	63.7	331.5	5.45	5.2	8.8	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	35.5	57.5	303.6	5.46	5.3	8.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	35.2	50.8	297.1	5.62	5.8	8.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	33.2	45.7	272.1	5.62	6.0	8.2	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	31.3	40.0	246.0	5.60	6.1	7.9	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	45.2	101.6	431.3	4.86	4.2	9.6	16.77	13.64	10.07	0.932	7.77
51 T	51.03	45.6	99.6	427.8	5.10	4.3	9.4	15.01	13.53	10.02	0.827	7.01
47 T	47.02	40.5	85.4	373.7	4.94	4.4	9.2	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	37.8	100.8	338.3	4.21	3.4	9.0	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	35.4	77.1	298.6	4.42	3.9	8.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	33.3	69.9	275.2	4.46	3.9	8.3	12.35	12.04	9.01	0.772	5.65
38 T	38.01	31.8	63.4	256.4	4.50	4.0	8.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	33.2	58.5	261.4	4.79	4.5	7.9	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	31.1	53.1	239.6	4.80	4.5	7.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	29.0	48.0	218.8	4.83	4.6	7.5	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	28.9	43.0	214.2	4.93	5.0	7.4	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	26.7	37.6	190.9	4.96	5.1	7.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	25.1	33.0	172.3	4.97	5.2	6.9	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	25.1	25.8	158.4	4.97	6.2	6.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	22.2	23.5	140.5	4.92	6.3	6.0	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	18.7	22.0	123.0	4.81	6.6	5.6	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	16.2	20.7	109.5	4.79	6.8	5.3	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	13.5	19.2	96.5	4.79	7.1	5.0	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	27.0	54.5	194.5	3.99	3.6	7.2	10.73	10.62	8.29	0.740	4.83
34 T	34.03	26.1	51.3	185.5	4.02	3.6	7.1	10.01	10.57	8.27	0.685	4.54
31 T	31.01	25.0	47.1	173.8	4.05	3.7	7.0	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	21.2	33.1	128.0	4.02	3.9	6.0	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	21.7	29.7	130.2	4.21	4.4	6.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	20.2	25.9	116.1	4.22	4.5	5.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	18.8	21.5	100.8	4.17	4.7	5.4	4.35	9.90	5.75	0.340	2.37



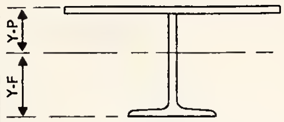
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 4 x19 I-T	14.22	19.3	19.5	101.0	4.23	5.2	5.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	16.9	18.5	90.8	4.17	5.4	4.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	14.7	17.6	81.4	4.09	5.5	4.6	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	11.6	16.1	67.5	4.06	5.8	4.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.1	15.5	58.2	4.00	6.4	3.7	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	24.4	68.0	167.3	3.15	2.5	6.9	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	22.1	50.5	141.7	3.33	2.8	6.4	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	20.7	40.0	126.7	3.51	3.2	6.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	20.0	37.1	119.8	3.54	3.2	6.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	19.2	34.2	112.5	3.57	3.3	5.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	19.6	44.8	113.5	2.96	2.5	5.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	18.7	41.6	106.3	2.99	2.6	5.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	17.8	38.4	99.2	3.02	2.6	5.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	17.1	35.5	93.2	3.06	2.6	5.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x25 T	24.99	17.0	30.9	90.8	3.21	2.9	5.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	16.3	28.2	84.8	3.24	3.0	5.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	15.5	25.8	79.0	3.28	3.1	5.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	15.1	23.0	73.6	3.28	3.2	4.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	16.2	23.5	78.6	3.38	3.3	4.9	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	15.1	20.5	70.2	3.40	3.4	4.6	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	15.0	17.1	66.3	3.47	3.9	4.4	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	14.1	14.5	58.2	3.43	4.0	4.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x15 I-T	11.11	12.5	14.1	54.8	3.41	4.4	3.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	10.7	13.3	48.3	3.34	4.5	3.6	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.6	12.4	40.8	3.35	4.8	3.3	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.6	11.4	30.4	3.19	5.5	2.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	13.1	21.8	59.1	2.89	2.7	4.5	5.59	7.06	6.78	0.513	2.20
17 T	17.00	12.8	19.9	55.6	2.93	2.8	4.4	5.00	7.00	6.75	0.453	2.00
15 T	14.99	12.3	17.4	51.2	2.95	2.9	4.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	8.9	10.7	34.8	2.95	3.9	3.2	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.2	9.5	20.7	2.76	5.0	2.2	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	10.9	18.6	43.2	2.53	2.3	3.9	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	10.4	16.4	39.5	2.56	2.4	3.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	10.1	14.5	36.5	2.59	2.5	3.6	3.98	5.98	6.50	0.400	1.43
6 x 4 x16 I-T	11.07	10.7	10.7	34.1	2.69	3.2	3.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	10.2	10.8	33.1	2.65	3.1	3.3	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.2	9.7	29.6	2.63	3.2	3.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	7.8	9.5	26.5	2.59	3.4	2.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	7.7	9.4	26.0	2.59	3.4	2.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.6	9.0	23.4	2.57	3.5	2.6	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.6	8.7	20.4	2.51	3.6	2.3	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.4	8.7	20.5	2.54	3.8	2.3	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	8.5	12.8	27.0	2.17	2.1	3.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	8.2	11.3	24.7	2.19	2.2	3.0	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	7.9	9.4	21.9	2.19	2.3	2.8	3.10	4.95	5.75	0.340	1.18



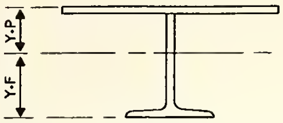
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 4 x 9.5 T	9.52	8.1	8.2	21.5	2.25	2.6	2.7	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.1	7.8	19.5	2.22	2.7	2.5	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.2	7.6	17.5	2.19	2.8	2.3	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.8	7.2	14.7	2.16	3.1	2.0	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.6	6.9	12.2	2.09	3.4	1.8	1.32	5.00	2.68	0.204	0.77
4 x 4 x 7.5 T	7.55	5.3	6.1	12.0	1.80	2.2	2.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.5	5.9	10.6	1.77	2.4	1.8	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.7	5.6	9.1	1.76	2.5	1.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.2	5.3	6.5	1.63	2.9	1.2	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	4.5	4.5	1.41	2.7	1.0	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.5	4.6	7.5	1.40	1.6	1.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.4	4.3	5.9	1.36	1.8	1.4	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.4	4.0	4.6	1.31	1.9	1.2	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	3.7	2.8	1.16	2.4	0.8	0.65	3.00	1.84	0.167	0.34



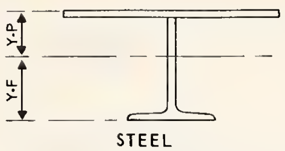
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
21 x 9 x 96 I-T	70.15	108.9	174.3	1,429.1	7.92	8.2	13.1	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	97.0	150.2	1,240.9	7.93	8.3	12.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	93.5	136.8	1,189.9	8.13	8.7	12.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	89.4	128.0	1,121.8	8.14	8.8	12.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	84.4	116.9	1,037.3	8.14	8.9	12.3	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	85.1	174.0	1,035.1	6.54	5.9	12.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	94.8	187.9	1,176.0	6.87	6.3	12.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	89.1	173.9	1,090.5	6.88	6.3	12.2	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	83.6	160.0	1,007.4	6.88	6.3	12.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	84.2	138.9	970.3	6.99	7.0	11.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	78.4	127.3	890.1	7.00	7.0	11.4	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	73.5	116.2	819.1	7.01	7.0	11.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	69.5	107.1	761.0	7.03	7.1	10.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	70.8	100.1	763.8	7.14	7.6	10.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	67.1	91.9	710.3	7.13	7.7	10.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	63.5	84.1	658.2	7.15	7.8	10.4	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	70.2	114.7	719.3	6.27	6.3	10.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	65.8	105.1	661.6	6.27	6.3	10.1	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	61.6	95.4	605.7	6.28	6.3	9.8	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	58.0	87.1	558.8	6.29	6.4	9.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	56.9	76.5	536.2	6.48	7.0	9.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	53.7	69.3	493.3	6.49	7.1	9.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	50.5	62.5	452.0	6.52	7.2	9.0	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	48.2	55.5	413.5	6.46	7.5	8.6	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	55.1	101.0	512.4	5.55	5.1	9.3	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	52.3	91.5	477.3	5.56	5.2	9.1	13.31	14.16	10.04	0.718	5.87
14 x 8 x 53 I-T	36.44	48.1	72.9	409.6	5.65	5.6	8.5	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	45.7	66.6	379.0	5.66	5.7	8.3	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	43.2	60.1	348.7	5.68	5.8	8.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	43.1	53.3	340.7	5.81	6.4	7.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	40.9	47.9	313.1	5.81	6.5	7.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	38.9	42.0	283.6	5.78	6.8	7.3	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	42.3	81.3	343.4	4.64	4.2	8.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	40.2	73.7	317.9	4.69	4.3	7.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	38.6	66.8	296.9	4.72	4.4	7.7	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	40.1	61.2	299.8	4.98	4.9	7.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	38.0	55.5	276.2	5.00	5.0	7.3	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	35.9	50.2	253.7	5.03	5.1	7.1	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	35.8	45.0	247.7	5.12	5.5	6.9	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	33.5	39.3	221.8	5.13	5.6	6.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	31.8	34.5	200.7	5.12	5.8	6.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	27.0	31.7	182.0	5.08	6.7	5.7	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	23.3	29.9	161.6	5.00	6.9	5.4	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	19.7	28.2	141.3	4.86	7.2	5.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	16.9	26.8	125.5	4.81	7.4	4.7	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	14.2	25.3	110.8	4.77	7.8	4.4	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	33.0	57.6	226.8	4.20	3.9	6.9	10.73	10.62	8.29	0.740	4.83
34 T	34.03	32.1	54.2	216.9	4.23	4.0	6.8	10.01	10.57	8.27	0.685	4.54
31 T	31.01	31.0	49.7	203.7	4.26	4.1	6.6	9.12	10.49	8.24	0.615	4.19

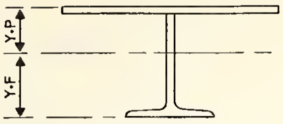


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

7.65# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 8 x 45	I-T	29.46	30.5	47.0	190.8	4.21	4.1	6.3	8.66	10.12	8.02	0.618	3.54
33	I-T	21.93	26.8	34.7	150.0	4.18	4.3	5.6	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29	I-T	19.99	27.5	31.1	151.7	4.35	4.9	5.5	5.88	10.22	5.80	0.500	2.95
25	I-T	17.19	25.8	27.1	135.7	4.35	5.0	5.3	5.06	10.08	5.76	0.430	2.54
21	I-T	14.79	22.4	24.3	117.7	4.26	5.2	4.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19	I-T	14.22	20.3	25.0	116.7	4.30	5.8	4.7	4.18	10.24	4.02	0.394	2.56
17	I-T	12.81	17.7	23.8	104.9	4.22	5.9	4.4	3.77	10.12	4.01	0.329	2.42
15	I-T	11.55	15.4	22.8	93.7	4.12	6.1	4.1	3.40	10.00	4.00	0.269	2.30
11.5	I-T	8.93	12.1	21.2	77.4	4.04	6.4	3.7	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9	I-T	7.38	9.4	20.5	65.9	3.92	7.0	3.2	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5	T	38.49	27.3	53.6	167.5	3.53	3.1	6.1	11.32	9.08	8.79	0.831	4.31
9 x 8 3/4 x 35	T	34.95	26.2	49.6	157.6	3.56	3.2	6.0	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30	T	29.99	25.9	42.3	149.6	3.70	3.5	5.8	8.82	9.12	7.56	0.695	3.79
27.5	T	27.51	25.2	39.3	141.8	3.73	3.6	5.6	8.09	9.06	7.53	0.630	3.53
25	T	24.99	24.3	36.1	133.5	3.75	3.7	5.5	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39	T	38.96	24.3	47.7	134.3	3.14	2.8	5.5	11.46	8.16	8.59	0.875	4.31
35.5	T	35.46	23.3	44.3	126.3	3.17	2.9	5.4	10.43	8.08	8.54	0.795	3.92
32	T	31.96	22.4	40.8	118.4	3.21	2.9	5.3	9.40	8.00	8.50	0.715	3.54
29	T	28.97	21.6	37.7	111.5	3.24	3.0	5.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25	T	24.99	21.6	32.7	108.2	3.38	3.3	5.0	7.35	8.13	7.07	0.628	3.08
22.5	T	22.51	20.9	29.8	101.2	3.40	3.4	4.9	6.62	8.06	7.04	0.563	2.78
20	T	19.99	20.1	27.1	94.6	3.44	3.5	4.7	5.88	8.00	7.00	0.503	2.45
18	T	18.36	19.6	24.2	87.8	3.42	3.6	4.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28	I-T	18.42	20.7	24.6	92.8	3.51	3.8	4.5	5.42	8.06	6.54	0.463	2.29
24	I-T	15.75	19.6	21.4	83.0	3.51	3.9	4.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20	I-T	13.71	17.9	19.5	77.7	3.55	4.3	4.0	4.03	8.14	5.27	0.378	2.80
17	I-T	11.82	15.1	18.5	68.0	3.49	4.5	3.7	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15	I-T	11.11	13.1	18.4	63.5	3.43	4.9	3.5	3.27	8.12	4.01	0.314	1.98
13	I-T	9.79	11.2	17.5	55.8	3.34	5.0	3.2	2.88	8.00	4.00	0.254	1.84
10	I-T	7.44	8.9	16.6	46.8	3.30	5.3	2.8	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5	I-T	5.19	5.7	15.4	34.3	3.06	6.0	2.2	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19	T	19.01	17.2	23.0	71.2	3.04	3.1	4.1	5.59	7.06	6.78	0.513	2.20
17	T	17.00	16.8	20.9	66.9	3.06	3.2	4.0	5.00	7.00	6.75	0.453	2.00
15	T	14.99	16.3	18.3	61.3	3.06	3.4	3.8	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6	T	8.60	9.3	14.4	40.6	2.96	4.4	2.8	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5	I-T	4.27	4.3	13.0	23.2	2.62	5.4	1.8	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18	T	17.99	14.5	19.6	52.5	2.66	2.7	3.6	5.29	6.12	6.56	0.560	1.86
15.5	T	15.50	13.9	17.3	48.0	2.68	2.8	3.4	4.56	6.04	6.52	0.465	1.60
13.5	T	13.53	13.5	15.2	44.1	2.69	2.9	3.3	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16	I-T	11.07	11.1	14.1	39.9	2.73	3.6	2.8	3.26	6.24	4.03	0.404	1.62
11	T	11.02	11.3	13.5	39.1	2.70	3.5	2.9	3.24	6.16	4.03	0.424	1.60
9.5	T	9.55	9.6	13.1	34.7	2.65	3.6	2.7	2.81	6.08	4.01	0.349	1.46
12	I-T	8.47	8.1	12.8	30.7	2.58	3.8	2.4	2.49	6.00	4.00	0.279	1.38
8.25	T	8.26	8.0	12.6	30.3	2.58	3.8	2.4	2.43	6.00	4.00	0.269	1.38
7	T	7.04	6.9	12.2	27.0	2.54	3.9	2.2	2.07	5.96	3.97	0.224	1.19
8.5	I-T	6.03	5.8	11.8	23.4	2.45	4.0	2.0	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9	T	5.85	5.6	11.8	23.5	2.47	4.2	2.0	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4	I-T	3.36	3.0	10.7	14.7	2.17	4.8	1.4	0.99	6.00	1.84	0.188	0.68

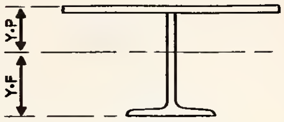


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	11.4	13.5	32.8	2.27	2.4	2.9	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	11.1	11.8	29.9	2.27	2.5	2.7	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	9.8	10.7	26.3	2.24	2.7	2.5	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.6	10.9	25.5	2.28	3.0	2.3	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.4	10.6	22.9	2.23	3.1	2.2	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.4	10.3	20.4	2.18	3.2	2.0	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.0	9.8	16.9	2.11	3.4	1.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.7	9.4	13.8	2.00	3.7	1.5	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	7.8	8.5	17.4	1.85	2.2	2.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.6	8.3	15.4	1.82	2.3	1.9	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.5	8.3	14.1	1.80	2.5	1.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.7	8.0	12.3	1.75	2.6	1.5	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	7.7	10.4	1.70	2.8	1.4	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	7.2	7.2	1.53	3.2	1.0	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	6.1	5.0	1.30	2.9	0.8	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.8	6.2	9.0	1.41	1.9	1.4	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.5	5.8	7.0	1.34	2.0	1.2	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.5	5.5	5.3	1.26	2.1	1.0	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	5.0	3.1	1.06	2.6	0.6	0.65	3.00	1.84	0.167	0.34



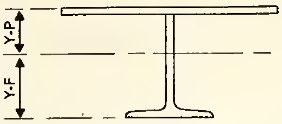
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
21 x 9 x 96 I-T	70.15	122.1	180.3	1,554.7	8.13	8.6	12.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	110.1	155.7	1,359.5	8.15	8.7	12.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4x 73 I-T	53.96	106.7	141.9	1,307.0	8.35	9.2	12.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	102.6	132.9	1,235.2	8.35	9.3	12.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	97.4	121.4	1,145.8	8.35	9.4	11.8	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	96.7	181.0	1,143.0	6.77	6.3	11.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4x 114 I-T	77.40	106.7	194.5	1,288.5	7.09	6.6	12.1	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	101.0	180.2	1,199.6	7.10	6.7	11.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	95.4	165.8	1,113.0	7.11	6.7	11.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4x 85 I-T	60.34	95.8	144.0	1,066.6	7.19	7.4	11.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	89.9	132.0	983.2	7.21	7.4	10.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	85.0	120.6	908.3	7.22	7.5	10.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	80.9	111.2	846.8	7.24	7.6	10.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2x 60 I-T	43.76	82.2	104.0	847.3	7.33	8.1	10.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	78.5	95.6	790.2	7.33	8.3	10.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	74.8	87.5	734.5	7.34	8.4	9.8	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2x 78 I-T	54.99	80.6	119.1	795.0	6.46	6.7	9.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	76.1	109.1	734.3	6.46	6.7	9.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	71.7	99.2	675.1	6.47	6.8	9.4	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	68.1	90.5	625.0	6.48	6.9	9.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	67.1	79.5	599.1	6.65	7.5	8.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	63.8	72.1	552.9	6.66	7.7	8.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	60.6	64.9	508.2	6.68	7.8	8.4	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	57.7	58.1	464.8	6.60	8.1	8.0	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	57.1	75.7	460.9	5.82	6.1	8.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	54.6	69.1	427.6	5.83	6.2	7.8	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	52.1	62.3	394.4	5.83	6.3	7.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4x 38 I-T	27.05	52.0	55.3	384.4	5.96	6.9	7.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	49.7	49.8	353.7	5.94	7.1	7.1	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	43.6	47.6	320.2	5.88	7.3	6.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	50.2	85.1	390.6	4.84	4.6	7.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	48.0	77.1	362.6	4.88	4.7	7.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	46.3	69.8	339.0	4.91	4.9	7.3	11.18	11.95	8.98	0.682	5.26
12 x 10 x 58 I-T	37.58	48.7	75.0	366.4	5.13	4.9	7.5	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	46.9	68.4	341.7	5.12	5.0	7.3	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	48.0	63.6	339.2	5.14	5.3	7.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	45.8	57.6	313.3	5.15	5.4	6.8	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	43.6	52.0	288.6	5.17	5.5	6.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2x 36 I-T	24.94	43.6	46.7	281.0	5.25	6.0	6.4	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	40.7	41.2	252.0	5.24	6.2	6.1	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	35.7	39.4	227.9	5.21	6.4	5.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	28.0	39.1	204.4	5.11	7.3	5.2	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	24.2	37.2	181.2	5.01	7.5	4.9	4.34	12.16	4.01	0.349	2.91
16.51-T	13.11	20.4	35.2	157.9	4.84	7.7	4.5	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	17.5	33.8	139.8	4.76	8.0	4.1	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.81-T	9.34	14.7	32.2	123.2	4.68	8.4	3.8	2.75	12.00	3.06	0.250	2.10
10 1/2x 8 1/4x 36.5 T	36.48	39.9	60.2	260.2	4.37	4.3	6.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	39.0	56.7	249.1	4.40	4.4	6.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	37.8	51.9	234.1	4.42	4.5	6.2	9.12	10.49	8.24	0.615	4.19



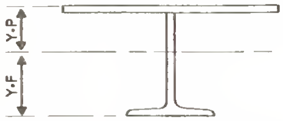
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 8 x 33 I-T	21.93	33.1	35.9	171.6	4.29	4.8	5.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	32.2	34.0	172.6	4.44	5.4	5.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	28.0	32.3	154.4	4.41	5.5	4.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	23.2	30.5	133.4	4.30	5.7	4.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	21.0	31.2	131.2	4.31	6.3	4.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	18.4	29.9	117.6	4.21	6.4	3.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.0	28.7	104.8	4.09	6.6	3.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	12.5	27.0	85.9	3.95	6.9	3.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9.0 I-T	7.38	9.7	26.2	72.4	3.79	7.5	2.8	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	33.2	56.3	194.2	3.70	3.4	5.8	11.32	9.08	8.79	0.831	4.31
35 T	34.95	32.1	51.9	183.0	3.73	3.5	5.7	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	31.8	44.3	173.0	3.85	3.9	5.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	31.0	41.0	163.9	3.87	4.0	5.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	30.2	37.6	154.4	3.88	4.1	5.1	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	29.6	50.2	156.0	3.30	3.1	5.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	28.6	46.5	147.0	3.32	3.2	5.1	10.43	8.08	8.54	0.795	3.92
32 T	31.96	27.6	42.8	138.0	3.35	3.2	5.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	26.8	39.4	130.1	3.38	3.3	4.8	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	26.9	34.2	125.6	3.50	3.7	4.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	26.1	31.1	117.4	3.52	3.8	4.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	25.3	28.2	109.6	3.54	3.9	4.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	24.7	25.2	101.5	3.50	4.0	4.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	25.5	25.9	106.3	3.58	4.2	4.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	22.1	24.8	94.9	3.56	4.3	3.8	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	18.5	24.6	88.2	3.57	4.8	3.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.6	23.4	76.9	3.48	4.9	3.3	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.5	23.3	71.3	3.41	5.3	3.1	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.5	22.2	62.3	3.29	5.4	2.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.1	21.2	51.8	3.20	5.7	2.4	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.9	19.8	37.3	2.91	6.3	1.9	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 I-T	19.01	21.7	23.9	82.8	3.13	3.5	3.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	21.3	21.7	77.6	3.14	3.6	3.6	5.00	7.00	6.75	0.453	2.00
15 T	14.99	18.9	20.8	70.7	3.12	3.7	3.4	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.6	18.6	45.7	2.91	4.8	2.5	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.4	16.8	25.1	2.46	5.7	1.5	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	18.4	20.4	61.3	2.74	3.0	3.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	17.8	17.9	55.9	2.74	3.1	3.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	15.7	17.4	51.2	2.73	3.3	2.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.5	17.9	45.1	2.71	3.9	2.5	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.7	17.3	44.5	2.70	3.8	2.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.9	16.8	39.3	2.63	4.0	2.3	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.4	16.3	34.4	2.53	4.1	2.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.2	16.2	34.0	2.53	4.1	2.1	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.0	15.7	30.1	2.47	4.3	1.9	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.9	15.2	25.8	2.36	4.3	1.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.7	15.3	25.9	2.37	4.5	1.7	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.1	13.9	15.8	2.02	5.1	1.1	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.0	14.7	38.3	2.31	2.7	2.6	4.27	5.11	5.80	0.500	1.47



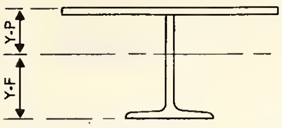
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 12.5 T	12.48	12.2	14.3	34.6	2.30	2.8	2.4	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.1	13.8	30.2	2.25	3.0	2.2	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.8	14.0	29.0	2.26	3.3	2.1	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.6	13.6	25.9	2.20	3.4	1.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.6	13.2	22.9	2.12	3.5	1.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.1	12.7	18.7	2.03	3.7	1.5	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.8	12.2	15.1	1.89	4.0	1.2	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.0	11.1	20.0	1.85	2.5	1.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.8	10.8	17.5	1.81	2.6	1.6	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.7	10.7	15.9	1.77	2.8	1.5	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.8	10.3	13.8	1.70	2.9	1.3	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	9.9	11.6	1.63	3.0	1.2	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	9.2	7.8	1.42	3.4	0.8	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	7.8	5.3	1.20	3.0	0.7	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.9	8.1	10.2	1.40	2.1	1.3	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.6	7.5	7.8	1.30	2.2	1.0	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	7.1	5.9	1.19	2.3	0.8	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	6.3	3.3	0.97	2.7	0.5	0.65	3.00	1.84	0.167	0.34



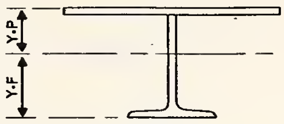
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	172.1	271.5	2,586.1	9.50	9.5	15.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	162.9	251.1	2,412.4	9.53	9.6	14.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	154.2	230.1	2,239.5	9.56	9.7	14.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	158.6	208.8	2,210.7	9.55	10.6	13.9	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	148.6	187.8	2,018.1	9.56	10.7	13.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	140.9	169.8	1,859.6	9.53	11.0	13.2	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	137.3	186.2	1,690.2	8.33	9.1	12.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	125.1	161.0	1,486.1	8.34	9.2	11.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	121.9	146.7	1,431.2	8.54	9.8	11.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	117.7	137.4	1,354.9	8.54	9.9	11.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	112.5	125.6	1,259.5	8.53	10.0	11.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	110.0	187.6	1,259.9	6.98	6.7	11.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	120.5	200.9	1,410.6	7.29	7.0	11.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	114.6	186.2	1,317.5	7.30	7.1	11.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	108.9	171.4	1,226.3	7.32	7.2	11.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	109.2	148.9	1,169.5	7.38	7.9	10.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	103.2	136.5	1,082.0	7.40	7.9	10.5	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	98.2	124.7	1,002.4	7.40	8.0	10.2	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	94.0	115.0	936.7	7.41	8.1	10.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	95.3	107.5	934.4	7.50	8.7	9.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	91.5	98.9	872.9	7.48	8.8	9.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	87.7	90.5	812.8	7.48	9.0	9.3	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	92.5	123.2	875.4	6.63	7.1	9.5	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	87.9	112.9	811.0	6.63	7.2	9.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	83.4	102.6	747.7	6.64	7.3	9.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	79.7	93.6	693.6	6.64	7.4	8.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	78.9	82.2	663.7	6.79	8.1	8.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	74.5	75.4	613.5	6.78	8.2	8.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	67.1	72.1	564.7	6.79	8.4	7.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	59.6	69.4	515.9	6.69	8.7	7.4	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	67.2	78.1	512.4	5.96	6.6	7.6	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	64.8	71.3	477.1	5.96	6.7	7.4	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	62.2	64.2	440.3	5.95	6.9	7.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	57.1	62.2	428.0	6.05	7.5	6.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	51.3	59.9	393.7	6.01	7.7	6.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	44.9	57.5	355.8	5.93	7.9	6.2	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	58.0	77.5	412.3	5.28	5.3	7.1	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	56.1	70.6	384.6	5.26	5.4	6.9	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	59.3	88.5	440.2	5.01	5.0	7.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	57.0	80.0	409.1	5.04	5.1	7.2	12.35	12.04	9.01	0.772	5.65
38 T	38.01	55.3	72.4	382.4	5.06	5.3	6.9	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	57.1	65.6	379.4	5.26	5.8	6.6	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	54.8	59.4	350.9	5.26	5.9	6.4	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	52.6	53.6	323.4	5.27	6.0	6.2	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	48.2	52.6	314.0	5.32	6.5	6.0	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	41.9	50.1	281.4	5.29	6.7	5.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	36.7	48.1	253.9	5.23	6.9	5.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	28.9	47.6	225.4	5.09	7.8	4.7	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	24.9	45.5	199.4	4.96	8.0	4.4	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	21.0	43.2	173.1	4.77	8.2	4.0	3.86	12.00	4.00	0.269	2.76

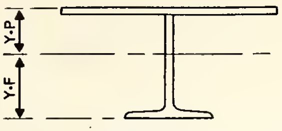


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

10.2# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
12 x 4 x 14	I-T	11.22	18.0	41.7	152.7	4.65	8.5	3.7	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8	I-T	9.34	15.1	40.0	134.0	4.54	8.9	3.4	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5	T	36.48	47.8	62.5	294.6	4.51	4.7	6.2	10.73	10.62	8.29	0.740	4.83
34	T	34.03	46.8	58.8	282.0	4.53	4.8	6.0	10.01	10.57	8.27	0.685	4.54
31	T	31.01	45.6	53.7	264.9	4.54	4.9	5.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45	I-T	29.46	44.7	50.4	245.7	4.45	4.9	5.5	8.66	10.12	8.02	0.618	3.54
39	I-T	25.64	42.5	43.8	219.8	4.41	5.0	5.2	7.54	9.94	7.99	0.528	3.16
33	I-T	21.93	36.9	40.4	192.6	4.35	5.2	4.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29	I-T	19.99	33.2	41.4	192.8	4.47	5.8	4.7	5.88	10.22	5.80	0.500	2.95
25	I-T	17.19	28.8	39.6	172.0	4.42	6.0	4.3	5.06	10.08	5.76	0.430	2.54
21	I-T	14.79	23.8	37.6	147.9	4.27	6.2	3.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19	I-T	14.22	21.5	38.3	144.6	4.27	6.7	3.8	4.18	10.24	4.02	0.394	2.56
17	I-T	12.81	18.9	36.8	129.3	4.15	6.9	3.5	3.77	10.12	4.01	0.329	2.42
15	I-T	11.55	16.4	35.4	114.8	4.01	7.0	3.2	3.40	10.00	4.00	0.269	2.30
11.5	I-T	8.93	12.7	33.5	93.4	3.83	7.3	2.8	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9	I-T	7.38	9.9	32.5	77.9	3.63	7.9	2.4	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30	T	29.99	38.6	45.9	196.5	3.95	4.3	5.1	8.82	9.12	7.56	0.695	3.79
27.5	T	27.51	37.8	42.4	186.1	3.96	4.4	4.9	8.09	9.06	7.53	0.630	3.53
25	T	24.99	36.9	38.9	175.1	3.97	4.5	4.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39	T	38.96	35.7	52.4	178.5	3.43	3.4	5.0	11.46	8.16	8.59	0.875	4.31
35.5	T	35.46	34.6	48.5	168.2	3.44	3.5	4.9	10.43	8.08	8.54	0.795	3.92
32	T	31.96	33.6	44.4	157.9	3.47	3.6	4.7	9.40	8.00	8.50	0.715	3.54
29	T	28.97	32.8	40.8	148.8	3.48	3.6	4.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25	T	24.99	32.9	35.3	142.8	3.59	4.0	4.3	7.35	8.13	7.07	0.628	3.08
22.5	T	22.51	32.1	32.1	133.3	3.59	4.2	4.2	6.62	8.06	7.04	0.563	2.78
20	T	19.99	29.1	31.3	124.2	3.59	4.3	4.0	5.88	8.00	7.00	0.503	2.45
18	T	18.36	25.9	30.5	114.6	3.54	4.4	3.8	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28	I-T	18.42	26.2	31.9	119.4	3.61	4.6	3.7	5.42	8.06	6.54	0.463	2.29
24	I-T	15.75	22.6	30.6	106.2	3.56	4.7	3.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20	I-T	13.71	18.9	30.4	98.0	3.55	5.2	3.2	4.03	8.14	5.27	0.378	2.80
17	I-T	11.82	15.9	29.1	84.9	3.43	5.3	2.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15	I-T	11.11	13.9	28.8	78.3	3.34	5.6	2.7	3.27	8.12	4.01	0.314	1.98
13	I-T	9.79	11.8	27.5	68.1	3.21	5.8	2.5	2.88	8.00	4.00	0.254	1.84
10	I-T	7.44	9.3	26.5	56.1	3.07	6.0	2.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5	I-T	5.19	6.0	24.7	39.7	2.74	6.6	1.6	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19	T	19.01	24.6	26.9	94.1	3.17	3.8	3.5	5.59	7.06	6.78	0.513	2.20
17	T	17.00	22.3	26.5	87.7	3.17	3.9	3.3	5.00	7.00	6.75	0.453	2.00
15	T	14.99	19.4	25.8	79.5	3.12	4.1	3.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6	T	8.60	9.8	23.2	50.1	2.82	5.1	2.2	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5	I-T	4.27	4.5	20.9	26.6	2.31	6.0	1.3	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18	T	17.99	21.0	23.0	69.9	2.78	3.3	3.0	5.29	6.12	6.56	0.560	1.86
15.5	T	15.50	18.4	22.3	63.3	2.76	3.5	2.8	4.56	6.04	6.52	0.465	1.60
13.5	T	13.53	16.1	21.8	57.7	2.73	3.6	2.6	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16	I-T	11.07	11.7	22.2	49.8	2.67	4.2	2.2	3.26	6.24	4.03	0.404	1.62
11	T	11.02	12.0	21.6	49.4	2.66	4.1	2.3	3.24	6.16	4.03	0.424	1.60
9.5	T	9.55	10.1	20.9	43.3	2.57	4.3	2.1	2.81	6.08	4.01	0.349	1.46
12	I-T	8.47	8.5	20.3	37.6	2.45	4.4	1.8	2.49	6.00	4.00	0.279	1.38
8.25	T	8.26	8.4	20.2	37.1	2.45	4.4	1.8	2.43	6.00	4.00	0.269	1.38



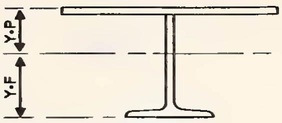
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x4 x 7 T	7.04	7.2	19.6	32.7	2.37	4.5	1.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.0	18.9	27.8	2.24	4.6	1.5	1.77	5.82	3.94	0.194	0.99
6 x3 x 5.9 T	5.85	5.8	19.1	27.9	2.26	4.8	1.5	1.72	6.00	3.06	0.175	1.05
6 x1 7/8x 4.4 I-T	3.36	3.1	17.2	16.6	1.87	5.3	1.0	0.99	6.00	1.84	0.188	0.68
5 x5 3/4x14.5 T	14.52	14.4	18.4	43.4	2.33	3.0	2.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.5	17.9	39.0	2.29	3.1	2.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.3	17.3	33.7	2.22	3.3	1.9	3.10	4.95	5.75	0.340	1.18
5 x4 x 9.5 T	9.52	9.0	17.6	32.0	2.21	3.6	1.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.8	17.1	28.4	2.13	3.6	1.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.7	16.5	25.0	2.05	3.7	1.5	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	15.8	20.2	1.93	3.9	1.3	1.69	4.94	3.95	0.204	0.89
5 x2 3/4x 4.5 T	4.49	3.8	15.2	16.1	1.78	4.2	1.1	1.32	5.00	2.68	0.204	0.77
4 x5 1/4x10 T	10.00	8.2	13.9	22.3	1.83	2.7	1.6	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.9	13.5	19.4	1.76	2.8	1.4	2.50	4.00	5.25	0.308	0.92
4 x4 x 7.5 T	7.55	5.8	13.3	17.5	1.71	3.0	1.3	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.9	12.9	15.0	1.63	3.1	1.2	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.9	12.4	12.5	1.54	3.2	1.0	1.48	3.95	3.94	0.204	0.67
4 x2 1/4x 3.25 T	3.26	2.3	11.4	8.2	1.32	3.5	0.7	0.96	4.00	2.28	0.189	0.54
3 1/2x2 1/8x 2.75 T	2.74	1.8	9.5	5.6	1.11	3.2	0.6	0.80	3.50	2.08	0.175	0.44
3 x4 x 8 T	8.02	5.0	10.1	11.4	1.36	2.3	1.1	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	9.4	8.6	1.25	2.3	0.9	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	8.7	6.3	1.13	2.4	0.7	1.25	2.92	3.94	0.194	0.49
3 x1 7/8x 2.2 T	2.21	1.3	7.5	3.5	0.89	2.8	0.5	0.65	3.00	1.84	0.167	0.34



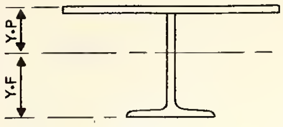
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	192.4	279.3	2800.2	9.72	10.0	14.6	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	183.1	258.5	2619.7	9.75	10.1	14.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	174.3	236.9	2438.3	9.78	10.3	14.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	178.3	215.0	2393.8	9.74	11.1	13.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	168.1	193.4	2191.3	9.74	11.3	13.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	160.2	175.0	2022.6	9.71	11.6	12.6	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	154.5	191.9	1833.0	8.50	9.6	11.9	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	142.1	165.9	1618.2	8.51	9.8	11.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	139.2	151.2	1559.6	8.70	10.3	11.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	134.8	141.6	1478.1	8.69	10.4	11.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	129.4	129.4	1375.7	8.68	10.6	10.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	125.0	193.9	1383.7	7.18	7.1	11.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	136.0	207.0	1540.0	7.48	7.4	11.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	130.1	191.8	1441.9	7.49	7.5	11.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	124.3	176.6	1345.3	7.50	7.6	10.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	124.3	153.4	1276.9	7.54	8.3	10.3	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	118.2	140.6	1184.4	7.55	8.4	10.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	113.1	128.4	1099.2	7.55	8.6	9.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	108.8	118.3	1028.5	7.55	8.7	9.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	110.2	110.8	1023.0	7.62	9.2	9.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	101.8	106.2	956.6	7.60	9.4	9.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	93.1	102.4	891.4	7.58	9.6	8.7	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	105.9	127.0	958.9	6.77	7.5	9.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	101.2	116.3	890.0	6.77	7.6	8.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	96.7	105.6	821.8	6.76	7.8	8.5	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	92.9	96.3	763.2	6.75	7.9	8.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	84.6	92.1	728.4	6.88	8.6	7.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	76.6	88.5	673.7	6.86	8.8	7.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	68.9	85.2	620.0	6.84	9.0	7.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	61.2	82.2	565.5	6.72	9.2	6.9	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	79.1	80.3	566.7	6.06	7.1	7.2	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	73.2	76.4	526.2	6.04	7.2	6.9	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	65.9	73.7	485.5	6.01	7.4	6.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	58.6	73.8	470.4	6.09	8.0	6.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	52.6	71.3	432.2	6.03	8.2	6.1	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	46.0	68.7	389.7	5.92	8.5	5.7	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	68.4	79.5	458.4	5.39	5.8	6.7	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	66.4	72.4	427.4	5.36	5.9	6.4	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	69.5	91.5	491.1	5.15	5.4	7.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	67.1	82.6	456.4	5.17	5.5	6.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	65.3	74.7	426.1	5.17	5.7	6.5	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	67.3	67.4	419.5	5.35	6.2	6.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	61.0	64.9	387.9	5.33	6.4	6.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	54.8	62.6	357.3	5.32	6.5	5.7	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	49.4	62.6	345.8	5.35	7.0	5.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	42.9	60.0	309.3	5.29	7.2	5.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	37.5	57.9	278.3	5.21	7.4	4.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	29.5	57.1	244.9	5.03	8.3	4.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	25.4	54.7	216.0	4.88	8.5	3.9	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	21.5	52.2	186.8	4.66	8.7	3.6	3.86	12.00	4.00	0.269	2.76



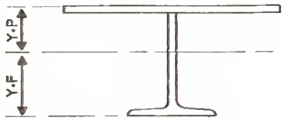
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 14 I-T	11.22	18.4	50.4	164.0	4.52	8.9	3.3	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	15.4	48.7	143.4	4.38	9.3	2.9	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	56.7	64.5	329.1	4.61	5.1	5.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	55.7	60.6	314.9	4.62	5.2	5.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	54.4	55.3	295.3	4.62	5.3	5.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	51.7	53.2	272.9	4.51	5.3	5.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	44.8	50.9	243.6	4.45	5.4	4.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	37.7	48.5	212.7	4.36	5.6	4.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	33.9	49.7	211.8	4.47	6.2	4.3	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	29.4	47.8	188.5	4.39	6.4	3.9	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.3	45.5	161.2	4.21	6.6	3.5	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	22.0	46.2	156.8	4.19	7.1	3.4	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.3	44.5	139.8	4.05	7.3	3.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.7	42.8	123.7	3.90	7.4	2.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.0	40.7	99.8	3.68	7.7	2.4	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.1	39.5	82.5	3.46	8.2	2.1	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	46.2	47.3	219.8	4.03	4.6	4.8	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	43.6	45.4	207.7	4.02	4.8	4.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	40.0	44.4	195.1	4.02	4.9	4.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	42.5	54.3	201.2	3.52	3.7	4.7	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	41.4	50.1	189.6	3.54	3.8	4.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	40.4	45.8	177.8	3.55	3.9	4.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	39.5	42.0	167.2	3.55	4.0	4.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	36.3	39.7	159.5	3.63	4.4	4.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	32.9	38.8	148.5	3.62	4.5	3.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.7	37.9	138.0	3.61	4.6	3.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	26.5	37.0	126.8	3.54	4.8	3.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	26.7	38.5	131.5	3.60	4.9	3.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	23.0	37.1	116.5	3.53	5.1	3.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.3	36.9	106.8	3.49	5.5	2.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.2	35.3	92.1	3.35	5.7	2.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.1	34.9	84.4	3.25	6.0	2.4	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.0	33.4	73.2	3.10	6.1	2.2	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.4	32.2	59.8	2.94	6.3	1.9	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.1	29.9	41.8	2.58	6.9	1.4	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	25.2	32.8	104.7	3.18	4.1	3.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.8	32.3	97.2	3.16	4.3	3.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.8	31.5	87.6	3.10	4.4	2.8	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.0	28.3	53.9	2.72	5.4	1.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.5	25.2	27.9	2.16	6.2	1.1	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.5	28.0	77.8	2.79	3.6	2.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.7	27.3	70.2	2.75	3.7	2.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.4	26.7	63.6	2.70	3.9	2.4	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.0	27.0	54.0	2.60	4.5	2.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.2	26.4	53.7	2.59	4.4	2.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.3	25.5	46.8	2.49	4.5	1.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.7	24.7	40.3	2.36	4.6	1.6	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.6	24.5	39.9	2.36	4.7	1.6	2.43	6.00	4.00	0.269	1.38



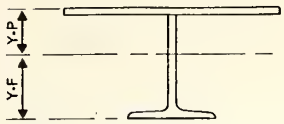
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

60t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 4 x 7 T	7.04	7.3	23.9	34.9	2.26	4.8	1.5	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.1	23.0	29.5	2.13	4.8	1.3	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	23.2	29.5	2.14	5.0	1.3	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.2	20.6	17.3	1.74	5.4	0.8	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.7	22.5	48.0	2.31	3.3	2.1	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.8	22.0	42.9	2.26	3.4	2.0	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.5	21.2	36.8	2.17	3.5	1.7	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.2	21.4	34.8	2.15	3.8	1.6	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.9	20.8	30.7	2.06	3.9	1.5	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.8	20.1	26.9	1.97	3.9	1.3	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	19.2	21.5	1.83	4.1	1.1	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	18.3	16.9	1.67	4.4	0.9	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.4	17.0	24.4	1.78	2.9	1.4	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.0	16.5	21.1	1.71	3.0	1.3	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.9	16.2	18.8	1.64	3.2	1.2	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.0	15.6	16.1	1.56	3.2	1.0	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	14.9	13.2	1.46	3.3	0.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	13.5	8.6	1.23	3.6	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	11.2	5.9	1.03	3.3	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.1	12.3	12.3	1.32	2.4	1.0	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	11.3	9.2	1.19	2.5	0.8	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	10.4	6.7	1.06	2.6	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	8.7	3.6	0.82	2.9	0.4	0.65	3.00	1.84	0.167	0.34



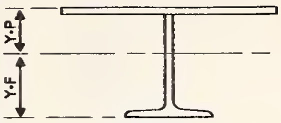
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	215.7	287.0	3031.0	9.92	10.6	14.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	206.4	265.6	2842.0	9.96	10.7	13.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	197.4	243.4	2650.0	9.98	10.9	13.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	201.0	221.0	2588.8	9.91	11.7	12.9	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	190.6	198.9	2374.2	9.90	11.9	12.5	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	179.9	182.4	2193.5	9.86	12.2	12.0	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	174.3	197.3	1985.2	8.65	10.1	11.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	161.7	170.5	1757.4	8.65	10.3	10.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	155.4	159.0	1693.9	8.83	10.9	10.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	145.5	154.5	1606.2	8.81	11.0	10.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	132.9	149.0	1495.6	8.78	11.3	10.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	142.4	199.9	1516.2	7.36	7.6	10.6	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	154.0	212.8	1678.9	7.66	7.9	10.9	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	147.9	197.2	1574.6	7.66	8.0	10.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	142.0	181.5	1471.4	7.67	8.1	10.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	141.6	157.7	1390.2	7.67	8.8	9.8	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	135.5	144.4	1291.6	7.68	8.9	9.5	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	130.2	131.9	1199.7	7.66	9.1	9.2	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	121.4	125.8	1123.1	7.65	9.2	8.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	113.7	127.2	1114.2	7.71	9.8	8.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	104.5	123.1	1042.0	7.67	10.0	8.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	95.5	119.2	970.8	7.64	10.2	8.1	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	121.4	130.6	1046.3	6.89	8.0	8.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	116.6	119.5	972.1	6.87	8.1	8.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	108.4	111.9	898.3	6.86	8.3	8.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	98.8	107.9	834.2	6.83	8.4	7.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	86.7	107.3	793.9	6.93	9.2	7.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	78.5	103.6	733.9	6.89	9.3	7.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	70.5	100.1	674.8	6.85	9.6	6.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	62.6	96.8	614.1	6.71	9.8	6.3	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	100.9	114.5	777.3	6.18	6.8	7.7	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	97.7	104.2	729.6	6.17	7.0	7.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	94.2	95.5	673.9	6.15	7.1	7.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	82.2	92.5	620.3	6.11	7.5	6.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	74.8	89.6	575.5	6.08	7.7	6.4	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	67.3	86.8	530.4	6.03	7.9	6.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	59.9	87.0	512.2	6.08	8.5	5.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	53.7	84.4	469.7	6.01	8.7	5.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	47.0	81.5	422.3	5.87	9.0	5.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	81.3	94.2	543.8	5.26	5.8	6.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	78.8	84.9	505.0	5.26	5.9	6.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	76.7	76.8	470.6	5.25	6.1	6.1	11.18	11.95	8.98	0.682	5.26
12 x 10 x 58 I-T	37.58	80.4	81.3	505.3	5.46	6.2	6.3	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	74.1	78.2	470.6	5.42	6.4	6.0	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	68.9	79.0	459.9	5.39	6.7	5.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	62.3	76.5	424.8	5.35	6.8	5.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	56.0	74.1	390.7	5.32	7.0	5.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	50.4	74.2	376.9	5.34	7.5	5.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	43.7	71.4	336.1	5.25	7.7	4.7	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	38.2	69.1	301.4	5.14	7.9	4.4	5.53	11.94	6.50	0.400	2.86



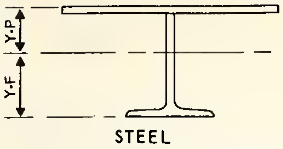
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

60t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 22 I-T	16.80	30.1	67.9	263.2	4.93	8.7	3.9	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	25.9	65.3	231.3	4.76	8.9	3.5	4.34	12.16	4.01	0.349	2.91
16.5I-T	13.11	21.9	62.3	199.3	4.52	9.1	3.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	18.7	60.3	174.2	4.36	9.3	2.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	15.6	58.4	151.6	4.19	9.7	2.6	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	66.3	66.9	364.1	4.68	5.5	5.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	62.1	65.9	348.0	4.68	5.6	5.3	10.01	10.57	8.27	0.685	4.54
31 T	31.01	56.7	64.4	325.7	4.66	5.7	5.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	52.8	63.0	299.8	4.54	5.7	4.8	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	45.8	60.4	267.0	4.46	5.8	4.4	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	38.5	57.8	232.1	4.34	6.0	4.0	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	34.6	59.2	230.0	4.42	6.6	3.9	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	29.9	57.1	203.9	4.32	6.8	3.6	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.7	54.4	173.6	4.12	7.0	3.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	22.4	55.1	168.1	4.09	7.5	3.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.6	53.2	149.4	3.93	7.6	2.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.0	51.2	131.7	3.77	7.7	2.6	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	13.2	48.8	105.4	3.52	8.0	2.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.2	47.2	86.6	3.28	8.5	1.8	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 32 I-T	31.96	52.8	54.2	247.6	4.03	4.7	4.6	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	48.5	55.0	243.0	4.07	5.0	4.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	44.7	54.0	229.2	4.05	5.1	4.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	40.8	53.0	214.7	4.03	5.3	4.1	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	50.4	55.9	224.5	3.60	4.0	4.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	49.2	51.5	211.2	3.60	4.1	4.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	47.0	48.1	197.7	3.60	4.2	4.1	9.40	8.00	8.50	0.715	3.54
29 T	28.97	43.1	47.1	185.5	3.59	4.3	3.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	37.2	47.4	175.9	3.65	4.7	3.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	33.6	46.4	163.3	3.61	4.9	3.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	30.3	45.5	151.3	3.59	5.0	3.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.0	44.4	138.5	3.50	5.1	3.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	27.2	46.0	143.1	3.56	5.3	3.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	23.4	44.4	126.2	3.47	5.4	2.8	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.6	44.2	114.9	3.41	5.9	2.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.5	42.4	98.6	3.25	6.0	2.3	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.3	41.7	90.0	3.14	6.3	2.2	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.2	40.0	77.7	2.98	6.4	1.9	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.6	38.5	62.9	2.79	6.6	1.6	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	6.1	35.6	43.5	2.42	7.1	1.2	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	25.7	39.4	114.8	3.16	4.5	2.9	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.2	38.8	106.1	3.12	4.6	2.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.1	37.9	95.2	3.04	4.7	2.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.2	34.0	57.3	2.61	5.6	1.7	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.6	29.9	28.9	2.01	6.3	1.0	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.9	33.7	85.4	2.77	3.9	2.5	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.1	32.9	76.6	2.71	4.0	2.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.6	32.2	69.0	2.65	4.1	2.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.1	32.2	57.8	2.52	4.8	1.8	3.26	6.24	4.03	0.404	1.62

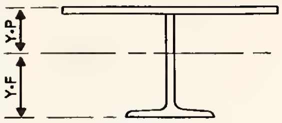


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
6 x 4 x 11 T	11.02	12.4	31.6	57.6	2.51	4.7	1.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.5	30.5	49.9	2.40	4.8	1.6	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.8	29.5	42.8	2.26	4.9	1.5	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.7	29.3	42.3	2.26	4.9	1.4	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.4	28.5	36.8	2.15	5.0	1.3	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.2	27.3	31.0	2.01	5.0	1.1	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.0	27.5	31.0	2.02	5.2	1.1	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.2	24.1	17.9	1.62	5.6	0.7	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.0	27.1	52.4	2.27	3.5	1.9	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.0	26.4	46.6	2.21	3.6	1.8	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.7	25.5	39.6	2.10	3.7	1.6	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.3	25.7	37.2	2.07	4.0	1.4	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.1	24.8	32.7	1.98	4.1	1.3	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.9	24.0	28.5	1.88	4.1	1.2	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.3	22.8	22.6	1.73	4.3	1.0	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	21.5	17.7	1.57	4.5	0.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.5	20.4	26.3	1.73	3.1	1.3	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.1	19.7	22.6	1.64	3.2	1.1	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.0	19.3	20.0	1.57	3.3	1.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.0	18.5	17.0	1.48	3.4	0.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	17.6	13.9	1.37	3.5	0.8	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	15.6	8.9	1.14	3.7	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	12.7	6.1	0.95	3.3	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.2	14.6	13.2	1.27	2.5	0.9	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	13.3	9.8	1.13	2.6	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	12.1	7.1	1.00	2.6	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	9.7	3.8	0.76	2.9	0.4	0.65	3.00	1.84	0.167	0.34



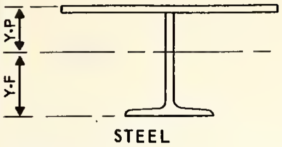
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x12 x120 I-T	84.70	240.7	293.9	3,260.9	10.09	11.1	13.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	231.2	271.9	3,062.1	10.12	11.3	13.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	222.1	249.1	2,858.5	10.13	11.5	12.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	225.2	226.5	2,780.6	10.04	12.3	12.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	203.7	214.7	2,552.8	10.02	12.5	11.9	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	184.3	206.2	2,359.3	9.95	12.8	11.4	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	195.4	202.2	2,135.0	8.77	10.6	10.9	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	174.6	182.6	1,892.9	8.75	10.8	10.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	159.1	180.2	1,823.7	8.91	11.5	10.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	148.9	175.6	1,729.3	8.88	11.6	9.8	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	135.9	169.8	1,609.9	8.83	11.8	9.5	13.54	20.98	8.24	0.615	8.39
18 x12 x 75 T	75.07	160.9	205.2	1,647.4	7.51	8.0	10.2	22.08	17.92	11.97	0.940	11.20
18 x11 3/4 x114 I-T	77.40	173.1	218.0	1,816.6	7.80	8.3	10.5	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	166.9	201.9	1,705.5	7.80	8.4	10.2	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	160.8	185.7	1,595.0	7.80	8.6	9.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	160.2	161.4	1,500.7	7.77	9.3	9.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	147.7	154.0	1,395.2	7.77	9.4	9.1	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	134.8	148.5	1,296.2	7.74	9.6	8.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	124.1	144.0	1,213.2	7.71	9.8	8.4	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	116.3	145.5	1,200.9	7.75	10.3	8.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	106.8	141.2	1,122.6	7.70	10.5	8.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	97.5	137.1	1,045.2	7.65	10.7	7.6	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	133.6	137.9	1,131.1	6.97	8.5	8.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	122.3	132.9	1,051.1	6.94	8.6	7.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	110.8	128.1	971.1	6.91	8.8	7.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	100.9	124.0	901.4	6.87	8.9	7.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	88.6	123.4	855.1	6.94	9.7	6.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	80.1	119.6	789.7	6.88	9.9	6.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	71.8	116.0	725.0	6.82	10.1	6.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	63.8	112.4	658.3	6.65	10.3	5.9	7.78	15.84	6.99	0.428	4.73
14 x10 x 74 I-T	49.25	115.7	117.0	844.6	6.25	7.2	7.3	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	106.4	112.3	792.5	6.23	7.4	7.1	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	97.4	108.6	731.4	6.20	7.5	6.7	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	83.8	106.7	670.6	6.13	8.0	6.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	76.2	103.7	621.3	6.08	8.2	6.0	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	68.5	100.7	571.6	6.01	8.3	5.7	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	61.0	101.0	550.2	6.05	9.0	5.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	54.6	98.2	503.5	5.94	9.2	5.1	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	47.7	95.1	451.4	5.79	9.5	4.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	93.8	96.5	594.3	5.33	6.2	6.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	86.9	91.2	551.0	5.32	6.3	6.0	12.35	12.04	9.01	0.772	5.65
38 T	38.01	78.3	89.1	512.5	5.29	6.5	5.8	11.18	11.95	8.98	0.682	5.26
12 x10 x 58 I-T	37.58	82.9	93.2	549.3	5.50	6.6	5.9	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	75.4	90.8	510.8	5.44	6.8	5.6	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	70.2	91.5	497.4	5.40	7.1	5.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	63.4	88.8	458.9	5.35	7.2	5.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	56.9	86.3	421.1	5.30	7.4	4.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	51.3	86.4	405.1	5.30	7.9	4.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	44.4	83.4	360.0	5.18	8.1	4.3	6.30	12.08	6.52	0.465	3.20

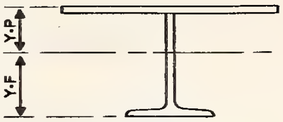


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

14.02# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 6 1/2 x 27	I-T	18.80	38.7	80.9	321.7	5.05	8.3	4.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22	I-T	16.80	30.6	79.3	279.1	4.81	9.1	3.5	4.94	12.30	4.03	0.424	3.20
19	I-T	14.76	26.3	76.3	244.5	4.62	9.3	3.2	4.34	12.16	4.01	0.349	2.91
16.5	I-T	13.11	22.2	72.9	210.0	4.38	9.5	2.9	3.86	12.00	4.00	0.269	2.76
14	I-T	11.22	18.9	70.7	182.8	4.19	9.7	2.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8	I-T	9.34	15.8	68.5	158.5	4.01	10.0	2.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5	T	36.48	67.7	77.8	397.0	4.72	5.9	5.1	10.73	10.62	8.29	0.740	4.83
34	T	34.03	63.4	76.7	378.9	4.71	6.0	4.9	10.01	10.57	8.27	0.685	4.54
31	T	31.01	57.8	75.1	353.9	4.67	6.1	4.7	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45	I-T	29.46	53.8	73.3	324.7	4.54	6.0	4.4	8.66	10.12	8.02	0.618	3.54
39	I-T	25.64	46.5	70.5	288.2	4.44	6.2	4.1	7.54	9.94	7.99	0.528	3.16
33	I-T	21.93	39.0	67.6	249.5	4.29	6.4	3.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29	I-T	19.99	35.1	69.2	246.2	4.35	7.0	3.6	5.88	10.22	5.80	0.500	2.95
25	I-T	17.19	30.3	66.9	217.4	4.23	7.2	3.3	5.06	10.08	5.76	0.430	2.54
21	I-T	14.79	25.0	63.8	184.2	4.01	7.4	2.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19	I-T	14.22	22.7	64.5	177.8	3.97	7.8	2.8	4.18	10.24	4.02	0.394	2.56
17	I-T	12.81	19.9	62.2	157.5	3.81	7.9	2.5	3.77	10.12	4.01	0.329	2.42
15	I-T	11.55	17.2	59.9	138.5	3.63	8.0	2.3	3.40	10.00	4.00	0.269	2.30
11.5	I-T	8.93	13.3	57.1	110.1	3.37	8.3	1.9	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9	I-T	7.38	10.3	55.1	89.9	3.11	8.7	1.6	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35	T	34.95	58.4	64.6	286.6	4.06	4.9	4.4	10.28	9.00	8.75	0.751	3.94
32	T	31.96	53.9	63.4	270.5	4.05	5.0	4.3	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30	T	29.99	49.5	64.2	264.4	4.08	5.3	4.1	8.82	9.12	7.56	0.695	3.79
27.5	T	27.51	45.5	63.2	248.8	4.05	5.5	3.9	8.09	9.06	7.53	0.630	3.53
25	T	24.99	41.6	62.0	232.6	4.01	5.6	3.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39	T	38.96	57.3	58.7	246.5	3.64	4.3	4.2	11.46	8.16	8.59	0.875	4.31
35.5	T	35.46	52.7	57.5	231.6	3.63	4.4	4.0	10.43	8.08	8.54	0.795	3.92
32	T	31.96	48.0	56.3	216.2	3.62	4.5	3.8	9.40	8.00	8.50	0.715	3.54
29	T	28.97	43.9	55.2	202.4	3.60	4.6	3.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25	T	24.99	37.8	55.6	190.7	3.63	5.0	3.4	7.35	8.13	7.07	0.628	3.08
22.5	T	22.51	34.2	54.5	176.5	3.59	5.2	3.2	6.62	8.06	7.04	0.563	2.78
20	T	19.99	30.8	53.5	163.0	3.54	5.3	3.0	5.88	8.00	7.00	0.503	2.45
18	T	18.36	27.4	52.2	148.7	3.45	5.4	2.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28	I-T	18.42	27.6	53.9	153.3	3.50	5.6	2.8	5.42	8.06	6.54	0.463	2.29
24	I-T	15.75	23.7	52.2	134.6	3.39	5.7	2.6	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20	I-T	13.71	19.9	51.8	121.9	3.31	6.1	2.4	4.03	8.14	5.27	0.378	2.80
17	I-T	11.82	16.7	49.7	104.1	3.14	6.2	2.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15	I-T	11.11	14.5	48.8	94.8	3.02	6.5	1.9	3.27	8.12	4.01	0.314	1.98
13	I-T	9.79	12.3	46.7	81.5	2.86	6.6	1.7	2.88	8.00	4.00	0.254	1.84
10	I-T	7.44	9.7	44.9	65.6	2.66	6.8	1.5	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5	I-T	5.19	6.2	41.3	44.9	2.28	7.3	1.1	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19	T	19.01	26.1	46.3	123.7	3.12	4.7	2.7	5.59	7.06	6.78	0.513	2.20
17	T	17.00	23.5	45.6	113.9	3.07	4.8	2.5	5.00	7.00	6.75	0.453	2.00
15	T	14.99	20.4	44.5	101.7	2.97	5.0	2.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6	T	8.60	10.3	39.8	60.1	2.50	5.8	1.5	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5	I-T	4.27	4.6	34.3	29.8	1.89	6.5	0.9	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18	T	17.99	22.2	39.7	92.1	2.73	4.1	2.3	5.29	6.12	6.56	0.560	1.86



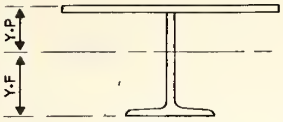
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x6 1/2 x 15.5 T	15.50	19.3	38.7	82.3	2.66	4.3	2.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.9	37.9	73.8	2.58	4.4	1.9	3.98	5.98	6.50	0.400	1.43
6 x4 x 16 I-T	11.07	12.3	37.7	61.0	2.43	5.0	1.6	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.5	37.0	61.0	2.43	4.9	1.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.6	35.7	52.5	2.30	5.0	1.5	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.9	34.4	44.9	2.16	5.0	1.3	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.8	34.2	44.3	2.16	5.0	1.3	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.5	33.1	38.4	2.05	5.1	1.2	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.3	31.6	32.2	1.91	5.1	1.0	1.77	5.82	3.94	0.194	0.99
6 x3 x 5.9 T	5.85	6.0	31.9	32.2	1.91	5.3	1.0	1.72	6.00	3.06	0.175	1.05
6 x1 7/8 x 4.4 I-T	3.36	3.2	27.4	18.4	1.51	5.7	0.7	0.99	6.00	1.84	0.188	0.68
5 x5 3/4 x 14.5 T	14.52	15.2	31.9	56.2	2.22	3.7	1.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.1	31.1	49.7	2.15	3.8	1.6	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.8	29.8	42.0	2.03	3.9	1.4	3.10	4.95	5.75	0.340	1.18
5 x4 x 9.5 T	9.52	9.4	30.0	39.3	1.99	4.2	1.3	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.1	28.9	34.4	1.89	4.2	1.2	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.0	27.8	29.8	1.79	4.3	1.1	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.4	26.3	23.5	1.64	4.4	0.9	1.69	4.94	3.95	0.204	0.89
5 x2 3/4 x 4.5 T	4.49	4.0	24.6	18.3	1.47	4.6	0.7	1.32	5.00	2.68	0.204	0.77
4 x5 1/4 x 10 T	10.00	8.6	23.9	27.9	1.67	3.2	1.2	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.2	22.9	23.8	1.57	3.3	1.0	2.50	4.00	5.25	0.308	0.92
4 x4 x 7.5 T	7.55	6.1	22.3	21.0	1.50	3.5	0.9	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.1	21.3	17.8	1.41	3.5	0.8	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	20.2	14.5	1.30	3.6	0.7	1.48	3.95	3.94	0.204	0.67
4 x2 1/4 x 3.25 T	3.26	2.4	17.5	9.2	1.07	3.8	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2x2 1/8 x 2.75 T	2.74	1.8	14.1	6.3	0.89	3.4	0.4	0.80	3.50	2.08	0.175	0.44
3 x4 x 8 T	8.02	5.3	16.9	14.0	1.22	2.6	0.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	15.3	10.2	1.07	2.7	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	13.7	7.4	0.94	2.7	0.5	1.25	2.92	3.94	0.194	0.49
3 x1 7/8 x 2.2 T	2.21	1.3	10.6	3.9	0.71	3.0	0.4	0.65	3.00	1.84	0.167	0.34



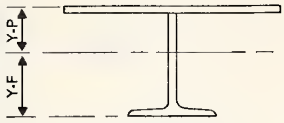
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

15.3# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120	I-T	84.70	268.0	300.3	3,494.1	10.24	11.6	13.0	24.91	24.30	12.09	0.930	13.51
110	I-T	77.50	258.4	277.7	3,284.2	10.25	11.8	12.7	22.80	24.16	12.04	0.855	12.32
100	I-T	70.48	249.1	254.3	3,067.5	10.25	12.1	12.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94	I-T	69.66	231.4	251.8	2,972.8	10.14	12.8	11.8	20.49	24.28	9.06	0.872	12.53
84	I-T	62.38	208.0	240.9	2,730.3	10.10	13.1	11.3	18.35	24.08	9.01	0.772	11.32
76	I-T	56.81	188.2	232.2	2,522.9	10.02	13.4	10.9	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96	I-T	70.15	206.6	218.6	2,285.3	8.87	11.1	10.5	20.63	21.14	9.04	0.935	12.15
82	I-T	59.86	178.3	205.5	2,027.3	8.82	11.4	9.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73	I-T	53.96	162.4	203.2	1,951.4	8.96	12.0	9.6	15.87	21.24	8.29	0.740	9.66
68	I-T	50.40	151.9	198.5	1,849.9	8.92	12.2	9.3	14.82	21.12	8.27	0.685	9.08
62	I-T	46.04	138.6	192.6	1,721.1	8.85	12.4	8.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75	T	75.07	181.2	210.0	1,779.5	7.64	8.5	9.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114	I-T	77.40	194.1	222.8	1,955.6	7.92	8.8	10.1	22.77	18.48	11.83	0.991	10.99
105	I-T	71.22	187.7	206.2	1,836.9	7.91	8.9	9.8	20.95	18.32	11.79	0.911	10.14
96	I-T	65.10	181.4	189.6	1,718.3	7.89	9.1	9.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85	I-T	60.34	164.8	180.5	1,610.3	7.84	9.8	8.9	17.75	18.32	8.84	0.911	9.63
77	I-T	54.46	150.7	174.1	1,497.4	7.82	9.9	8.6	16.02	18.16	8.79	0.831	8.62
70	I-T	49.48	137.4	168.4	1,390.7	7.78	10.1	8.3	14.55	18.00	8.75	0.751	7.88
64	I-T	45.19	126.4	163.8	1,300.8	7.74	10.3	7.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60	I-T	43.76	118.5	165.3	1,284.8	7.77	10.8	7.8	12.87	18.24	7.56	0.695	7.59
55	I-T	40.26	108.8	160.8	1,200.1	7.69	11.0	7.5	11.84	18.12	7.53	0.630	7.06
50	I-T	36.58	99.3	156.5	1,116.2	7.63	11.2	7.1	10.76	18.00	7.50	0.570	6.44
16 x 11 1/2 x 96	I-T	64.24	161.4	171.2	1,386.9	7.12	8.1	8.6	18.89	16.32	11.53	0.875	8.73
88	I-T	59.02	156.5	157.1	1,296.3	7.09	8.2	8.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78	I-T	54.99	136.4	155.9	1,214.6	7.03	8.9	7.8	16.17	16.32	8.59	0.875	8.63
71	I-T	49.98	124.7	150.8	1,128.4	6.98	9.0	7.5	14.70	16.16	8.54	0.795	7.85
64	I-T	44.99	112.9	145.7	1,041.9	6.93	9.2	7.2	13.23	16.00	8.50	0.715	7.08
58	I-T	40.79	102.7	141.5	966.2	6.88	9.4	6.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50	I-T	36.22	90.1	141.0	913.6	6.92	10.1	6.5	10.65	16.24	7.07	0.628	6.17
45	I-T	32.62	81.4	137.0	842.5	6.84	10.3	6.1	9.59	16.12	7.04	0.563	5.57
40	I-T	28.91	72.9	133.3	772.0	6.75	10.6	5.8	8.50	16.00	7.00	0.503	4.91
36	I-T	26.45	64.7	129.2	699.4	6.57	10.8	5.4	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58	T	58.04	140.8	141.8	1,086.2	6.53	7.7	7.7	17.07	15.00	10.50	0.850	8.46
54	T	53.99	130.2	138.2	1,024.5	6.49	7.9	7.4	15.88	14.91	10.48	0.760	8.17
14 x 12 x 78	I-T	50.45	126.7	130.6	928.3	6.32	7.3	7.1	14.84	14.06	12.00	0.718	6.01
14 x 10 x 74	I-T	49.25	119.1	131.7	910.4	6.30	7.6	6.9	14.49	14.18	10.07	0.783	6.38
68	I-T	45.24	108.4	128.2	853.7	6.27	7.9	6.7	13.31	14.16	10.04	0.718	5.87
61	I-T	40.54	99.0	124.4	786.8	6.22	7.9	6.3	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53	I-T	36.44	85.2	122.2	718.6	6.12	8.4	5.9	10.72	13.94	8.06	0.658	5.15
48	I-T	32.98	77.4	119.0	664.6	6.05	8.6	5.6	9.70	13.80	8.03	0.593	4.68
43	I-T	29.60	69.5	115.8	610.3	5.97	8.8	5.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38	I-T	27.05	61.9	116.3	585.7	5.98	9.5	5.0	7.96	14.12	6.78	0.513	4.41
34	I-T	24.30	55.4	113.2	534.8	5.86	9.7	4.7	7.15	14.00	6.75	0.453	4.01
30	I-T	21.69	48.4	109.7	478.0	5.68	9.9	4.4	6.38	13.86	6.73	0.383	3.74
12 x 12 x 50	T	50.01	107.0	111.6	675.9	5.40	6.1	6.3	14.71	12.00	12.00	0.775	5.61
12 x 10 x 58	I-T	37.58	84.2	107.0	591.5	5.51	7.0	5.5	11.05	12.18	10.01	0.641	4.37
53	I-T	34.55	76.5	104.4	549.1	5.43	7.2	5.3	10.16	12.06	10.00	0.576	4.16

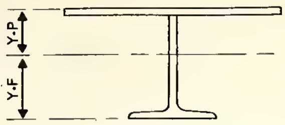


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

15.3# PLATE WEIGHT

NOMINAL SIZE				WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
					LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
													WIDTH	THICK	
IN. x IN. x LBS./FT.				LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
12	x 9	x 47	T	46.95	98.5	107.5	643.6	5.38	6.5	6.0	13.81	12.15	9.06	0.872	6.26
		42	T	41.99	88.5	104.7	595.6	5.35	6.7	5.7	12.35	12.04	9.01	0.772	5.65
		38	T	38.01	79.8	102.4	552.7	5.31	6.9	5.4	11.18	11.95	8.98	0.682	5.26
12	x 8	x 50	I-T	33.81	71.3	105.0	533.2	5.39	7.5	5.1	9.94	12.18	8.08	0.641	4.52
		45	I-T	30.39	64.4	102.1	490.9	5.32	7.6	4.8	8.94	12.06	8.04	0.576	4.05
		40	I-T	26.89	57.6	99.5	449.4	5.24	7.8	4.5	7.91	11.94	8.00	0.516	3.51
12	x 6 1/2	x 36	I-T	24.94	52.0	99.6	431.2	5.23	8.3	4.3	7.34	12.24	6.56	0.540	3.73
		31	I-T	21.43	45.0	96.4	381.9	5.09	8.5	4.0	6.30	12.08	6.52	0.465	3.20
		27	I-T	18.80	39.2	93.6	340.2	4.93	8.7	3.6	5.53	11.94	6.50	0.400	2.86
12	x 4	x 22	I-T	16.80	31.0	91.5	293.5	4.68	9.5	3.2	4.94	12.30	4.03	0.424	3.20
		19	I-T	14.76	26.6	88.1	256.2	4.48	9.6	2.9	4.34	12.16	4.01	0.349	2.91
		16.5	I-T	13.11	22.5	84.1	219.4	4.22	9.8	2.6	3.86	12.00	4.00	0.269	2.76
		14	I-T	11.22	19.1	81.6	190.3	4.03	9.9	2.3	3.30	11.90	3.97	0.224	2.38
12	x 3	x 11.8	I-T	9.34	16.0	79.2	164.4	3.83	10.3	2.1	2.75	12.00	3.06	0.250	2.10
10 1/2	x 8 1/4	x 36.5	T	36.48	69.0	89.6	428.5	4.73	6.2	4.8	10.73	10.62	8.29	0.740	4.83
		34	T	34.03	64.5	88.4	408.3	4.70	6.3	4.6	10.01	10.57	8.27	0.685	4.54
		31	T	31.01	58.7	86.7	380.5	4.66	6.5	4.4	9.12	10.49	8.24	0.615	4.19
10	x 8	x 45	I-T	29.46	54.6	84.5	348.1	4.51	6.4	4.1	8.66	10.12	8.02	0.618	3.54
		39	I-T	25.64	47.1	81.4	307.9	4.39	6.5	3.8	7.54	9.94	7.99	0.528	3.16
		33	I-T	21.93	39.5	78.1	265.4	4.22	6.7	3.4	6.45	9.74	7.96	0.433	2.84
10	x 5 3/4	x 29	I-T	19.99	35.6	80.0	260.9	4.27	7.3	3.3	5.88	10.22	5.80	0.500	2.95
		25	I-T	17.19	30.7	77.4	229.6	4.12	7.5	3.0	5.06	10.08	5.76	0.430	2.54
		21	I-T	14.79	25.3	73.9	193.7	3.89	7.7	2.6	4.35	9.90	5.75	0.340	2.37
10	x 4	x 19	I-T	14.22	23.0	74.5	186.4	3.84	8.1	2.5	4.18	10.24	4.02	0.394	2.56
		17	I-T	12.81	20.1	71.8	164.7	3.67	8.2	2.3	3.77	10.12	4.01	0.329	2.42
		15	I-T	11.55	17.4	69.1	144.4	3.49	8.3	2.1	3.40	10.00	4.00	0.269	2.30
		11.5	I-T	8.93	13.4	65.8	114.2	3.21	8.5	1.7	2.63	9.86	3.95	0.204	1.77
10	x 2 3/4	x 9	I-T	7.38	10.4	63.3	92.8	2.96	8.9	1.5	2.17	10.00	2.69	0.188	1.55
9	x 8 3/4	x 35	T	34.95	59.5	74.6	310.3	4.07	5.2	4.2	10.28	9.00	8.75	0.751	3.94
		32	T	31.96	54.8	73.4	292.2	4.05	5.3	4.0	9.40	8.94	8.71	0.686	3.60
9	x 7 1/2	x 30	T	29.99	50.3	74.2	284.6	4.06	5.7	3.8	8.82	9.12	7.56	0.695	3.79
		27.5	T	27.51	46.2	73.1	267.2	4.02	5.8	3.7	8.09	9.06	7.53	0.630	3.53
		25	T	24.99	42.2	71.8	249.1	3.97	5.9	3.5	7.35	9.00	7.50	0.570	3.22
8	x 8 1/2	x 39	T	38.96	58.4	67.8	267.8	3.67	4.6	4.0	11.46	8.16	8.59	0.875	4.31
		35.5	T	35.46	53.7	66.4	251.0	3.65	4.7	3.8	10.43	8.08	8.54	0.795	3.92
		32	T	31.96	48.9	65.1	233.8	3.62	4.8	3.6	9.40	8.00	8.50	0.715	3.54
		29	T	28.97	44.6	64.0	218.3	3.59	4.9	3.4	8.52	7.93	8.46	0.645	3.22
8	x 7	x 25	T	24.99	38.4	64.3	204.6	3.60	5.3	3.2	7.35	8.13	7.07	0.628	3.08
		22.5	T	22.51	34.7	63.1	188.8	3.54	5.4	3.0	6.62	8.06	7.04	0.563	2.78
		20	T	19.99	31.2	62.0	173.8	3.48	5.6	2.8	5.88	8.00	7.00	0.503	2.45
		18	T	18.36	27.8	60.5	158.1	3.38	5.7	2.6	5.40	7.93	6.99	0.428	2.31
8	x 6 1/2	x 28	I-T	18.42	27.9	62.4	162.6	3.43	5.8	2.6	5.42	8.06	6.54	0.463	2.29
		24	I-T	15.75	23.9	60.4	142.2	3.30	5.9	2.4	4.63	7.92	6.50	0.398	1.92
8	x 5 1/4	x 20	I-T	13.71	20.1	59.9	128.1	3.21	6.4	2.1	4.03	8.14	5.27	0.378	2.80
		17	I-T	11.82	16.8	57.3	109.0	3.02	6.5	1.9	3.48	8.00	5.25	0.308	1.92
8	x 4	x 15	I-T	11.11	14.7	56.2	98.9	2.91	6.7	1.8	3.27	8.12	4.01	0.314	1.98
		13	I-T	9.79	12.5	53.7	84.8	2.74	6.8	1.6	2.88	8.00	4.00	0.254	1.84
		10	I-T	7.44	9.7	51.6	67.8	2.53	7.0	1.3	2.19	7.90	3.94	0.204	1.34
8	x 2 1/4	x 6.5	I-T	5.19	6.2	46.9	46.1	2.15	7.4	1.0	1.53	8.00	2.28	0.188	1.08



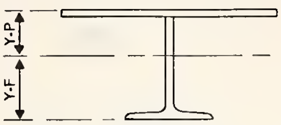
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x6 3/4x19 T	19.01	26.5	53.8	131.9	3.07	5.0	2.5	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.8	52.9	121.1	3.00	5.1	2.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.6	51.6	107.6	2.89	5.2	2.1	4.41	6.93	6.73	0.383	1.87
7 x4 x 8.6 T	8.60	10.4	45.8	62.5	2.39	6.0	1.4	2.53	7.00	4.00	0.272	1.47
7 x2 1/8x 5.5 I-T	4.27	4.6	38.7	30.5	1.78	6.6	0.8	1.25	7.00	2.08	0.188	0.88
6 x6 1/2x18 T	17.99	22.5	46.1	98.2	2.68	4.4	2.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.5	44.9	87.3	2.59	4.5	1.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.0	43.9	78.0	2.51	4.6	1.8	3.98	5.98	6.50	0.400	1.43
6 x4 x16 I-T	11.07	12.4	43.3	63.9	2.34	5.1	1.5	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.7	42.7	63.9	2.34	5.0	1.5	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.7	41.1	54.9	2.21	5.1	1.3	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.0	39.3	46.7	2.07	5.2	1.2	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.9	39.2	46.1	2.06	5.2	1.2	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.5	37.8	39.8	1.95	5.3	1.1	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.3	35.9	33.3	1.80	5.3	0.9	1.77	5.82	3.94	0.194	0.99
6 x3 x 5.9 T	5.85	6.1	36.2	33.2	1.81	5.5	0.9	1.72	6.00	3.06	0.175	1.05
6 x1 7/8x 4.4 I-T	3.36	3.3	30.5	18.8	1.41	5.8	0.6	0.99	6.00	1.84	0.188	0.68
5 x5 3/4x14.5 T	14.52	15.4	36.9	59.6	2.17	3.9	1.6	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.3	35.9	52.5	2.08	4.0	1.5	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.9	34.4	44.1	1.96	4.0	1.3	3.10	4.95	5.75	0.340	1.18
5 x4 x 9.5 T	9.52	9.5	34.4	41.1	1.91	4.3	1.2	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.2	33.1	35.8	1.81	4.4	1.1	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.0	31.7	31.0	1.71	4.4	1.0	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.4	29.8	24.3	1.55	4.5	0.8	1.69	4.94	3.95	0.204	0.89
5 x2 3/4x 4.5 T	4.49	4.0	27.6	18.8	1.39	4.7	0.7	1.32	5.00	2.68	0.204	0.77
4 x5 1/4x10 T	10.00	8.7	27.4	29.4	1.61	3.4	1.1	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.3	26.2	24.9	1.51	3.4	1.0	2.50	4.00	5.25	0.308	0.92
4 x4 x 7.5 T	7.55	6.1	25.4	21.9	1.43	3.6	0.9	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.1	24.1	18.5	1.34	3.6	0.8	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.1	22.6	15.0	1.23	3.7	0.7	1.48	3.95	3.94	0.204	0.67
4 x2 1/4x 3.25 T	3.26	2.4	19.2	9.5	1.00	3.9	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2x2 1/8x 2.75 T	2.74	1.9	15.3	6.4	0.84	3.5	0.4	0.80	3.50	2.08	0.175	0.44
3 x4 x 8 T	8.02	5.4	19.2	14.7	1.17	2.7	0.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.9	17.1	10.7	1.02	2.8	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	15.1	7.6	0.89	2.8	0.5	1.25	2.92	3.94	0.194	0.49
3 x1 7/8x 2.2 T	2.21	1.3	11.3	4.0	0.66	3.0	0.4	0.65	3.00	1.84	0.167	0.34



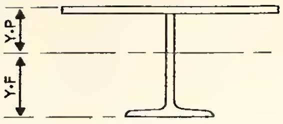
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	311.7	330.4	3,967.3	10.44	12.7	12.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	287.9	320.5	3,731.1	10.43	13.0	11.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	263.4	310.8	3,484.2	10.40	13.2	11.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	240.1	312.3	3,355.5	10.24	14.0	10.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	215.6	300.9	3,079.9	10.16	14.3	10.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	194.9	291.4	2,842.1	10.04	14.6	9.8	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	214.5	271.4	2,585.0	8.97	12.1	9.5	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	184.7	257.5	2,291.0	8.87	12.4	8.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	168.1	255.9	2,199.2	8.96	13.1	8.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	157.1	250.8	2,082.1	8.89	13.3	8.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	143.2	244.3	1,933.2	8.78	13.5	7.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	218.4	227.4	2,045.1	7.80	9.4	9.0	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	231.1	241.9	2,235.7	8.08	9.7	9.2	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	213.6	235.1	2,099.6	8.04	9.8	8.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	196.1	228.4	1,962.6	8.00	10.0	8.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	170.6	226.6	1,825.9	7.90	10.7	8.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	155.8	220.0	1,696.0	7.85	10.9	7.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	141.9	213.8	1,572.4	7.77	11.1	7.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	130.2	208.8	1,467.6	7.69	11.3	7.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	122.3	210.4	1,444.2	7.70	11.8	6.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	112.1	205.4	1,346.0	7.59	12.0	6.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	102.2	200.7	1,248.3	7.49	12.2	6.2	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	196.2	207.4	1,723.6	7.31	8.8	8.3	20.76	16.66	11.53	0.960	10.07
65 T	65.04	179.2	203.3	1,618.0	7.27	9.0	8.0	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	177.1	203.7	1,587.6	7.23	9.0	7.8	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	162.4	198.2	1,481.7	7.16	9.1	7.5	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	141.1	196.9	1,377.5	7.05	9.8	7.0	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	128.8	191.3	1,277.6	6.98	9.9	6.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	116.5	185.8	1,176.9	6.90	10.1	6.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	105.8	181.1	1,088.3	6.80	10.3	6.0	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	92.7	180.8	1,022.3	6.79	11.0	5.7	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	83.7	176.4	939.5	6.67	11.2	5.3	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	74.8	172.3	857.2	6.54	11.5	5.0	8.50	16.00	7.00	0.503	4.91
36.6 I-T	26.45	66.3	167.2	773.2	6.33	11.7	4.6	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	147.0	179.2	1,246.5	6.60	8.5	7.0	17.07	15.00	10.50	0.850	8.46
54 T	53.99	134.8	176.1	1,171.7	6.54	8.7	6.7	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	111.7	164.4	970.6	6.25	8.7	5.9	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	101.6	160.1	891.3	6.17	8.8	5.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	87.5	157.2	808.0	6.03	9.2	5.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	79.3	153.6	744.6	5.93	9.4	4.8	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	71.1	149.9	680.8	5.80	9.6	4.5	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	63.4	150.5	649.6	5.78	10.2	4.3	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	56.7	146.9	590.4	5.63	10.4	4.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	49.4	142.5	524.9	5.42	10.6	3.7	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	86.3	138.4	670.6	5.45	7.8	4.8	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	78.4	135.2	620.2	5.35	7.9	4.6	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	101.8	138.4	738.3	5.40	7.3	5.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	91.3	135.3	680.1	5.34	7.5	5.0	12.35	12.04	9.01	0.772	5.65
38 T	38.01	82.1	132.6	628.1	5.26	7.7	4.7	11.18	11.95	8.98	0.682	5.26

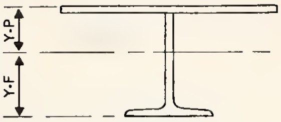


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 8 x 50 I-T	33.81	73.1	135.4	599.3	5.29	8.2	4.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	65.9	132.2	549.6	5.18	8.3	4.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	58.9	129.2	500.6	5.08	8.5	3.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	53.2	129.3	477.8	5.04	9.0	3.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	45.9	125.4	420.4	4.86	9.2	3.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	39.9	121.9	372.2	4.67	9.3	3.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	31.6	118.5	318.1	4.40	10.1	2.7	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.1	114.1	276.2	4.17	10.2	2.4	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	22.9	108.8	235.3	3.91	10.3	2.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.5	105.3	202.8	3.70	10.4	1.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.2	102.0	174.2	3.50	10.7	1.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	71.0	116.2	487.3	4.68	6.9	4.2	10.73	10.62	8.29	0.740	4.83
34 T	34.03	66.4	114.8	462.9	4.64	7.0	4.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	60.3	112.7	429.3	4.56	7.1	3.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	55.9	109.7	390.8	4.40	7.0	3.6	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.2	105.8	343.5	4.25	7.1	3.2	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.3	101.6	293.7	4.04	7.3	2.9	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.3	103.8	286.7	4.06	7.9	2.8	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.2	100.6	250.6	3.89	8.0	2.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	25.8	95.8	209.9	3.64	8.1	2.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.4	96.2	201.1	3.58	8.6	2.1	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.5	92.7	176.9	3.40	8.6	1.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.7	89.0	154.4	3.22	8.7	1.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.6	84.2	120.9	2.92	8.9	1.4	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.6	80.2	97.5	2.67	9.2	1.2	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	61.2	97.3	354.4	4.03	5.8	3.6	10.28	9.00	8.75	0.751	3.94
32 T	31.96	56.2	95.8	332.4	3.99	5.9	3.5	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	51.6	96.6	321.6	3.98	6.2	3.3	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	47.4	95.2	300.6	3.92	6.3	3.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.2	93.6	278.9	3.85	6.5	3.0	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	60.4	88.1	308.0	3.66	5.1	3.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	55.3	86.5	287.4	3.62	5.2	3.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	50.2	84.9	266.4	3.57	5.3	3.1	9.40	8.00	8.50	0.715	3.54
29 T	28.97	45.8	83.5	247.4	3.51	5.4	3.0	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	39.4	83.9	229.5	3.49	5.8	2.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	35.5	82.3	210.6	3.41	5.9	2.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	31.8	80.9	192.7	3.33	6.1	2.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.3	78.8	174.4	3.21	6.2	2.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.5	80.9	178.9	3.25	6.3	2.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.4	78.3	155.3	3.10	6.4	2.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.4	77.4	138.7	2.99	6.8	1.8	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.1	73.8	117.3	2.80	6.8	1.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.9	72.0	105.9	2.68	7.1	1.5	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.7	68.5	90.3	2.51	7.1	1.3	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.9	65.1	71.6	2.29	7.2	1.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.3	57.9	48.1	1.92	7.6	0.8	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	27.0	70.0	146.3	2.92	5.4	2.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.2	68.9	133.3	2.84	5.5	1.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.0	66.9	117.7	2.72	5.6	1.8	4.41	6.93	6.73	0.383	1.87



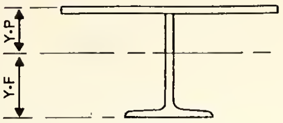
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 8.6 T	8.60	10.6	58.2	66.6	2.18	6.3	1.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.7	46.8	31.8	1.58	6.8	0.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.0	59.9	109.0	2.55	4.7	1.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.9	58.3	96.1	2.45	4.8	1.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.3	56.8	85.2	2.35	4.9	1.5	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.6	55.2	68.7	2.16	5.4	1.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.9	54.6	68.9	2.16	5.3	1.3	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.9	52.1	58.8	2.03	5.4	1.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.1	49.5	49.7	1.88	5.4	1.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.0	49.3	49.1	1.88	5.4	1.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.7	47.2	42.1	1.76	5.5	0.9	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.4	44.3	35.0	1.62	5.5	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.2	44.6	34.9	1.63	5.7	0.8	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.3	35.9	19.6	1.25	5.9	0.5	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.7	47.6	65.6	2.04	4.2	1.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.5	46.1	57.3	1.94	4.2	1.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.1	43.8	47.7	1.81	4.3	1.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.7	43.5	44.2	1.76	4.6	1.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.4	41.5	38.3	1.65	4.6	0.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.2	39.5	33.0	1.55	4.6	0.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.5	36.4	25.7	1.40	4.7	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.1	33.0	19.8	1.24	4.8	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.9	34.5	31.9	1.48	3.6	0.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.4	32.7	26.8	1.38	3.6	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.3	31.3	23.5	1.31	3.7	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.2	29.3	19.7	1.21	3.8	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.2	27.1	15.8	1.10	3.8	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	22.0	10.0	0.89	4.0	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	17.1	6.8	0.74	3.5	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.5	23.6	15.9	1.07	2.9	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.0	20.5	11.5	0.93	2.9	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.8	17.5	8.1	0.80	2.9	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.4	12.3	4.2	0.59	3.1	0.3	0.65	3.00	1.84	0.167	0.34



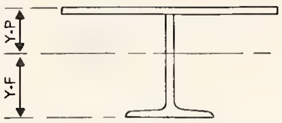
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 14 x 130 I-T	89.83	349.7	405.1	4,643.9	10.59	13.3	11.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	320.9	400.8	4,420.1	10.52	13.8	11.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	296.2	390.6	4,154.1	10.48	14.0	10.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	270.6	380.4	3,873.9	10.41	14.3	10.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	247.2	380.5	3,713.1	10.23	15.0	9.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	221.7	368.3	3,401.9	10.10	15.3	9.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	200.2	357.9	3,132.5	9.94	15.6	8.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	267.7	337.1	3,207.9	9.26	12.0	9.5	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	220.8	330.8	2,865.7	8.97	13.0	8.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	189.8	316.0	2,533.0	8.81	13.3	8.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	172.5	314.9	2,423.4	8.86	14.0	7.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	161.1	309.4	2,290.2	8.76	14.2	7.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	146.7	302.2	2,120.9	8.62	14.5	7.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	225.0	279.4	2,296.1	7.87	10.2	8.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	237.7	295.7	2,501.4	8.14	10.5	8.5	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	219.6	288.5	2,346.2	8.08	10.7	8.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	201.3	281.3	2,189.4	8.01	10.9	7.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	175.2	278.4	2,024.1	7.86	11.6	7.3	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	159.7	271.3	1,876.2	7.78	11.7	6.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	145.3	264.6	1,735.1	7.66	11.9	6.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	133.2	259.1	1,615.2	7.56	12.1	6.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	125.2	260.7	1,584.6	7.54	12.7	6.1	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	114.7	255.1	1,473.1	7.41	12.8	5.8	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	104.4	249.9	1,361.8	7.27	13.0	5.5	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	202.0	255.8	1,936.8	7.36	9.6	7.6	20.76	16.66	11.53	0.960	10.07
65 T	65.04	184.3	251.1	1,812.3	7.29	9.8	7.2	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	181.8	251.1	1,773.7	7.23	9.8	7.1	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	166.5	245.1	1,651.7	7.14	9.9	6.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	144.8	242.7	1,525.6	7.00	10.5	6.3	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	132.0	236.6	1,411.6	6.89	10.7	6.0	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	119.2	230.5	1,296.3	6.78	10.9	5.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	108.1	225.2	1,195.1	6.65	11.1	5.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	94.7	225.1	1,115.8	6.60	11.8	5.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	85.3	220.0	1,021.9	6.45	12.0	4.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	76.2	215.3	928.3	6.28	12.2	4.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	67.5	209.0	834.1	6.05	12.3	4.0	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	151.0	222.2	1,393.4	6.59	9.2	6.3	17.07	15.00	10.50	0.850	8.46
54 T	53.99	138.3	218.5	1,305.4	6.50	9.4	6.0	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	114.2	204.6	1,074.3	6.16	9.4	5.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	103.7	199.7	982.7	6.04	9.5	4.9	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	89.2	196.0	885.2	5.87	9.9	4.5	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	80.8	191.8	812.6	5.74	10.1	4.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	72.3	187.4	740.0	5.59	10.2	3.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	64.6	188.1	702.7	5.53	10.9	3.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	57.6	183.7	636.0	5.36	11.0	3.5	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	50.2	178.2	562.7	5.13	11.2	3.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	104.3	172.9	822.9	5.34	7.9	4.8	13.81	12.15	9.06	0.872	6.26



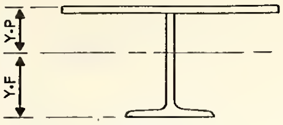
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
12 x 9 x 42 T	41.99	93.4	169.2	754.6	5.25	8.1	4.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	83.9	166.0	693.6	5.15	8.3	4.2	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	74.5	169.0	655.9	5.13	8.8	3.9	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	67.1	165.2	599.1	5.00	8.9	3.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	59.8	161.7	543.2	4.87	9.1	3.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	54.1	161.6	516.3	4.81	9.5	3.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.6	156.9	451.6	4.60	9.7	2.9	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.5	152.3	397.8	4.40	9.8	2.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.1	147.4	337.6	4.11	10.5	2.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.5	141.6	291.9	3.88	10.6	2.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.2	134.5	247.6	3.62	10.7	1.8	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.7	129.8	212.4	3.41	10.8	1.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.4	125.2	181.6	3.20	11.0	1.5	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	72.5	145.5	538.3	4.57	7.4	3.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	67.7	143.8	509.8	4.51	7.5	3.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	61.5	141.3	470.7	4.42	7.7	3.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	56.9	137.1	426.9	4.25	7.5	3.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.9	132.3	373.0	4.07	7.6	2.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.9	126.9	316.8	3.84	7.7	2.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.9	129.5	307.6	3.84	8.3	2.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.7	125.2	267.4	3.65	8.4	2.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.1	118.8	222.7	3.39	8.5	1.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.8	119.0	212.7	3.33	9.0	1.8	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.7	114.2	186.5	3.15	9.0	1.6	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.0	109.2	162.2	2.97	9.0	1.5	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.8	102.4	126.1	2.67	9.1	1.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.7	96.5	101.1	2.43	9.5	1.0	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	62.5	122.1	392.6	3.94	6.3	3.2	10.28	9.00	8.75	0.751	3.94
32 T	31.96	57.4	120.4	366.7	3.88	6.4	3.0	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	52.7	121.1	353.0	3.85	6.7	2.9	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	48.3	119.3	328.6	3.77	6.8	2.8	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.9	117.3	303.6	3.69	6.9	2.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	61.8	110.4	343.3	3.60	5.6	3.1	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	56.6	108.5	319.1	3.54	5.6	2.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	51.3	106.5	294.3	3.47	5.7	2.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	46.6	104.8	272.1	3.40	5.8	2.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.1	105.0	250.3	3.35	6.2	2.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.1	102.9	228.6	3.25	6.3	2.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.3	101.0	208.2	3.16	6.4	2.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.8	98.1	187.6	3.03	6.5	1.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.9	100.6	192.0	3.07	6.7	1.9	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.7	97.0	165.7	2.91	6.7	1.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.7	95.4	147.1	2.78	7.1	1.5	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.3	90.5	123.7	2.59	7.1	1.4	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.2	87.8	111.4	2.47	7.4	1.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.9	83.0	94.7	2.30	7.4	1.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.0	78.0	74.5	2.08	7.4	1.0	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.4	67.6	49.7	1.74	7.8	0.7	1.53	8.00	2.28	0.188	1.08



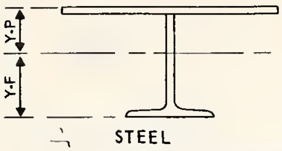
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	27.5	87.2	158.0	2.77	5.7	1.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.6	85.5	143.2	2.68	5.8	1.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.3	82.8	125.8	2.55	5.9	1.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.7	70.1	69.8	2.00	6.5	1.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.8	53.5	32.9	1.42	6.9	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.4	74.4	117.7	2.41	5.0	1.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.2	72.1	103.2	2.30	5.1	1.4	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.6	69.8	91.0	2.19	5.2	1.3	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.8	66.9	72.6	1.99	5.7	1.1	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.1	66.3	72.9	2.00	5.6	1.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.1	62.8	61.9	1.86	5.6	1.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.3	59.1	52.1	1.73	5.6	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.2	58.8	51.5	1.72	5.6	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.8	55.8	44.0	1.61	5.7	0.8	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.5	51.7	36.5	1.48	5.6	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.3	52.0	36.4	1.47	5.8	0.7	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.4	39.9	20.2	1.13	6.0	0.5	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	16.0	58.5	70.4	1.91	4.4	1.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.7	56.2	61.2	1.81	4.5	1.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.3	52.8	50.7	1.67	4.5	1.0	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.9	52.2	46.7	1.62	4.7	0.9	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.5	49.4	40.4	1.52	4.7	0.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.3	46.4	34.7	1.42	4.8	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.6	42.0	26.9	1.27	4.8	0.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.2	37.3	20.6	1.12	4.9	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.0	41.3	33.9	1.37	3.7	0.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.6	38.6	28.4	1.27	3.8	0.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.4	36.6	24.8	1.20	3.9	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.3	33.9	20.8	1.11	3.9	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.2	30.7	16.6	1.00	3.9	0.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.6	23.9	10.4	0.81	4.1	0.4	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.0	18.3	7.1	0.67	3.6	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.6	27.4	16.9	0.99	3.0	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.1	23.3	12.2	0.85	3.0	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.9	19.3	8.6	0.73	3.0	0.4	1.25	2.92	3.94	0.194	9.49
3 x 1 7/8 x 2.2 T	2.21	1.4	12.9	4.5	0.54	3.1	0.4	0.65	3.00	1.84	0.167	0.34

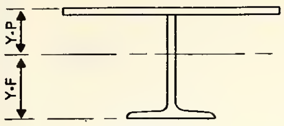


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
27 x14 x145 I-T	102.05	433.3	555.4	6,679.4	11.67	15.4	12.0	30.01	26.88	13.96	0.975	16.12
27 x10 x114 I-T	85.05	336.8	536.5	5,760.4	11.44	17.1	10.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	302.5	520.1	5,283.8	11.29	17.5	10.2	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	278.3	508.3	4,938.5	11.14	17.7	9.7	20.75	26.90	9.99	0.747	13.18
24 x14 x130 I-T	89.83	358.3	486.4	5,117.0	10.61	14.3	10.5	26.42	24.24	14.00	0.900	13.70
24 x12 x120 I-T	84.70	328.8	481.3	4,856.3	10.51	14.8	10.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	303.1	470.5	4,557.5	10.44	15.0	9.7	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	276.6	459.6	4,241.4	10.33	15.3	9.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	253.1	458.2	4,050.0	10.12	16.0	8.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	226.7	445.1	3,701.4	9.95	16.3	8.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	204.5	433.5	3,399.6	9.75	16.6	7.8	16.71	23.90	8.98	0.682	10.52
21 x13 x112 I-T	76.27	273.7	407.3	3,529.8	9.23	12.9	8.7	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	226.1	398.4	3,130.6	8.89	13.8	7.9	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	194.0	382.5	2,757.3	8.68	14.2	7.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	176.2	381.9	2,628.6	8.68	14.9	6.9	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	164.4	375.7	2,479.2	8.56	15.1	6.6	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	149.5	367.7	2,289.7	8.39	15.3	6.2	13.54	20.98	8.24	0.615	8.39
18 x12 x 75 T	75.07	230.5	338.6	2,535.1	7.85	11.0	7.5	22.08	17.92	11.97	0.940	11.20
18 x11 3/4 x114 I-T	77.40	243.3	357.0	2,755.3	8.12	11.3	7.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	224.4	349.1	2,579.7	8.03	11.5	7.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	205.5	341.3	2,401.8	7.93	11.7	7.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	179.0	337.2	2,208.2	7.75	12.3	6.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	163.0	329.5	2,041.6	7.63	12.5	6.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	148.1	321.9	1,882.7	7.49	12.7	5.8	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	135.6	315.8	1,747.7	7.35	12.9	5.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	127.5	317.4	1,710.3	7.32	13.4	5.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	116.7	311.0	1,585.7	7.17	13.6	5.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	106.1	305.0	1,461.4	7.01	13.8	4.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	206.7	310.9	2,138.5	7.33	10.3	6.9	20.76	16.66	11.53	0.960	10.07
65 T	65.04	188.5	305.4	1,994.6	7.23	10.6	6.5	19.13	16.55	11.51	0.855	9.59
16 x11 1/2 x 96 I-T	64.24	185.6	305.0	1,948.0	7.17	10.5	6.4	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	169.8	298.2	1,809.4	7.05	10.7	6.1	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	147.8	294.6	1,661.9	6.87	11.2	5.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	134.6	287.7	1,533.5	6.74	11.4	5.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	121.4	280.9	1,403.8	6.60	11.6	5.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	110.0	274.8	1,290.0	6.45	11.7	4.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	96.3	274.6	1,197.9	6.35	12.4	4.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	86.7	268.7	1,093.3	6.18	12.6	4.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	77.3	263.1	989.3	6.00	12.8	3.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	68.5	255.3	885.9	5.75	12.9	3.5	7.78	15.84	6.99	0.428	4.73
15 x10 1/2 x 58 T	58.04	154.2	270.9	1,529.5	6.51	9.9	5.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	141.2	266.4	1,428.2	6.40	10.1	5.4	15.88	14.91	10.48	0.760	8.17
14 x10 x 68 I-T	45.24	116.2	249.9	1,167.8	6.01	10.1	4.7	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	105.3	244.2	1,064.1	5.86	10.1	4.4	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	90.6	239.3	953.1	5.66	10.5	4.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	81.9	234.3	871.9	5.51	10.6	3.7	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	73.3	229.1	791.0	5.34	10.8	3.5	8.70	13.68	8.00	0.528	4.21

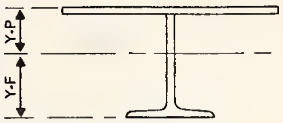


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
14 x 6 3/4 x 38 I-T	27.05	65.5	229.7	748.0	5.27	11.4	3.3	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	58.4	224.2	674.5	5.08	11.6	3.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	50.9	217.2	594.5	4.84	11.7	2.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	106.3	211.5	899.6	5.23	8.5	4.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	95.1	207.2	821.2	5.12	8.6	4.0	12.35	12.04	9.01	0.772	5.65
38 T	38.01	85.3	203.2	751.7	4.99	8.8	3.7	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	75.7	206.4	705.4	4.94	9.3	3.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	68.0	201.7	642.0	4.79	9.4	3.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	60.6	197.4	579.6	4.64	9.6	2.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	54.8	197.1	549.0	4.56	10.0	2.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	47.1	191.1	477.9	4.34	10.1	2.5	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.9	185.2	419.1	4.13	10.2	2.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.5	178.1	353.8	3.84	10.9	2.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.9	170.6	304.8	3.61	10.9	1.8	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.5	161.3	257.8	3.36	11.0	1.6	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.0	154.9	220.3	3.14	11.0	1.4	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.6	148.5	187.7	2.94	11.3	1.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	73.8	178.1	583.5	4.43	7.9	3.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	68.8	176.0	550.9	4.36	8.0	3.1	10.01	10.57	8.27	0.685	4.54
31 T	31.01	62.4	172.8	506.8	4.24	8.1	2.9	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	57.7	167.3	458.1	4.07	7.9	2.7	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	49.6	161.3	398.4	3.87	8.0	2.5	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	41.4	154.1	336.3	3.63	8.1	2.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.3	157.0	325.2	3.61	8.7	2.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.0	151.4	281.4	3.42	8.8	1.9	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.4	143.0	233.2	3.16	8.8	1.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.0	142.6	222.2	3.09	9.2	1.6	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.0	136.4	194.3	2.92	9.3	1.4	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.2	129.8	168.6	2.74	9.3	1.3	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.0	120.3	130.4	2.45	9.3	1.1	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.8	111.8	104.1	2.22	9.6	0.9	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	53.5	147.9	380.4	3.70	7.1	2.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	49.0	145.5	352.8	3.61	7.2	2.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.5	142.9	324.8	3.51	7.3	2.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	63.0	135.1	375.0	3.51	5.9	2.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	57.6	132.7	347.2	3.43	6.0	2.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	52.1	130.2	318.8	3.35	6.1	2.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.4	127.9	293.6	3.27	6.2	2.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.7	127.7	268.2	3.19	6.6	2.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.6	125.0	244.0	3.08	6.7	2.0	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.7	122.4	221.2	2.98	6.8	1.8	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.2	118.5	198.7	2.85	6.8	1.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.2	121.3	203.1	2.88	6.9	1.7	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.0	116.4	174.4	2.72	7.0	1.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.0	113.9	154.1	2.59	7.3	1.4	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.5	107.3	129.1	2.40	7.4	1.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.3	103.5	116.0	2.28	7.6	1.1	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.0	97.1	98.3	2.12	7.6	1.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.1	89.9	77.0	1.91	7.6	0.9	2.19	7.90	3.94	0.204	1.34



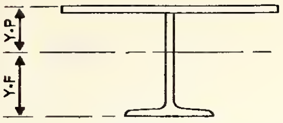
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

22.95# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 2 1/4 x 6.5 I-T	5.19	6.5	75.9	51.2	1.58	7.9	0.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	27.9	105.3	168.0	2.61	6.0	1.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.9	102.9	151.7	2.51	6.1	1.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.6	99.0	132.6	2.38	6.2	1.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.9	81.3	72.5	1.83	6.7	0.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.8	58.8	33.8	1.29	7.0	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.7	89.4	125.2	2.27	5.3	1.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.5	86.1	109.2	2.15	5.3	1.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.8	83.0	95.9	2.04	5.4	1.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.0	78.2	75.9	1.85	5.8	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.3	77.7	76.3	1.85	5.7	1.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.2	72.9	64.6	1.72	5.8	0.9	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.4	67.8	54.3	1.59	5.8	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.3	67.5	53.6	1.58	5.8	0.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.9	63.3	45.7	1.47	5.8	0.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.6	58.0	37.8	1.35	5.7	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.4	58.2	37.7	1.35	5.9	0.6	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.4	42.7	20.9	1.02	6.1	0.5	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	16.2	69.2	74.6	1.79	4.6	1.1	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.0	66.0	64.5	1.69	4.6	1.0	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.4	61.4	53.2	1.55	4.6	0.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.0	60.2	48.9	1.50	4.9	0.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.7	56.5	42.2	1.40	4.9	0.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.4	52.6	36.1	1.30	4.9	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.7	46.7	27.9	1.16	4.9	0.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.2	40.6	21.3	1.02	5.0	0.5	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.2	47.5	35.7	1.28	3.9	0.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.7	43.9	29.9	1.18	3.9	0.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.5	41.2	26.0	1.11	4.0	0.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.5	37.6	21.8	1.02	4.0	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.3	33.5	17.3	0.92	4.0	0.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.6	25.3	10.9	0.74	4.1	0.4	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.1	19.0	7.5	0.62	3.7	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.8	30.7	17.9	0.92	3.1	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.2	25.5	12.8	0.79	3.1	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.0	20.7	9.1	0.67	3.0	0.4	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.5	13.3	4.8	0.50	3.2	0.4	0.65	3.00	1.84	0.167	0.34



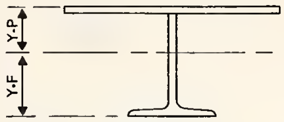
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

25.5# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
30 x 10 1/2 x 132	I-T	99.55	432.1	724.4	8,369.3	12.60	19.4	11.6	29.28	30.30	10.55	1.000	18.63
124	I-T	93.60	405.8	711.2	7,954.4	12.49	19.6	11.2	27.53	30.16	10.52	0.930	17.64
116	I-T	88.15	378.5	697.2	7,512.8	12.34	19.8	10.8	25.93	30.00	10.50	0.850	16.92
108	I-T	82.89	349.4	681.5	7,032.1	12.13	20.1	10.3	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145	I-T	102.05	442.3	653.4	7,254.6	11.65	16.4	11.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114	I-T	85.05	343.8	632.1	6,213.6	11.32	18.1	9.8	25.01	27.28	10.07	0.932	15.54
102	I-T	76.19	308.5	614.6	5,686.7	11.14	18.4	9.3	22.41	27.06	10.02	0.827	14.02
94	I-T	70.53	283.6	601.7	5,305.2	10.96	18.7	8.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130	I-T	89.83	365.2	574.9	5,553.1	10.55	15.2	9.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120	I-T	84.70	335.1	568.7	5,256.0	10.43	15.7	9.2	24.91	24.30	12.09	0.930	13.51
110	I-T	77.50	308.7	557.4	4,923.6	10.32	16.0	8.8	22.80	24.16	12.04	0.855	12.32
100	I-T	70.48	281.4	545.7	4,571.8	10.17	16.2	8.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94	I-T	69.66	257.8	542.5	4,352.5	9.95	16.9	8.0	20.49	24.28	9.06	0.872	12.53
84	I-T	62.38	230.7	528.2	3,967.2	9.74	17.2	7.5	18.35	24.08	9.01	0.772	11.32
76	I-T	56.81	208.0	515.3	3,634.5	9.51	17.5	7.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112	I-T	76.27	278.5	483.5	3,821.8	9.13	13.7	7.9	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96	I-T	70.15	230.4	471.6	3,369.1	8.74	14.6	7.1	20.63	21.14	9.04	0.935	12.15
82	I-T	59.86	197.3	454.2	2,955.8	8.49	15.0	6.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73	I-T	53.96	179.1	454.1	2,808.3	8.45	15.7	6.2	15.87	21.24	8.29	0.740	9.66
68	I-T	50.40	167.0	447.2	2,643.6	8.31	15.8	5.9	14.82	21.12	8.27	0.685	9.08
62	I-T	46.04	151.8	438.0	2,435.1	8.11	16.0	5.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75	T	75.07	235.0	402.8	2,752.0	7.78	11.7	6.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114	I-T	77.40	247.8	423.5	2,986.4	8.04	12.1	7.1	22.77	18.48	11.83	0.991	10.99
105	I-T	71.22	228.4	414.8	2,790.3	7.93	12.2	6.7	20.95	18.32	11.79	0.911	10.14
96	I-T	65.10	208.9	406.1	2,591.7	7.80	12.4	6.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85	I-T	60.34	182.1	400.6	2,371.6	7.59	13.0	5.9	17.75	18.32	8.84	0.911	9.63
77	I-T	54.46	165.6	392.1	2,186.8	7.44	13.2	5.6	16.02	18.16	8.79	0.831	8.62
70	I-T	49.48	150.3	383.6	2,011.2	7.28	13.4	5.2	14.55	18.00	8.75	0.751	7.88
64	I-T	45.19	137.5	376.6	1,862.0	7.12	13.5	4.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60	I-T	43.76	129.4	378.2	1,818.3	7.08	14.1	4.8	12.87	18.24	7.56	0.695	7.59
55	I-T	40.26	118.4	370.8	1,681.8	6.90	14.2	4.5	11.84	18.12	7.53	0.630	7.06
50	I-T	36.58	107.5	363.8	1,545.7	6.72	14.4	4.2	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5	T	70.58	210.6	370.4	2,320.6	7.25	11.0	6.3	20.76	16.66	11.53	0.960	10.07
65	T	65.04	191.8	364.1	2,157.6	7.12	11.2	5.9	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96	I-T	64.24	188.7	363.0	2,103.8	7.05	11.1	5.8	18.89	16.32	11.53	0.875	8.73
88	I-T	59.02	172.5	355.3	1,949.2	6.91	11.3	5.5	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78	I-T	54.99	150.3	350.3	1,781.9	6.71	11.9	5.1	16.17	16.32	8.59	0.875	8.63
71	I-T	49.98	136.7	342.5	1,639.9	6.56	12.0	4.8	14.70	16.16	8.54	0.795	7.85
64	I-T	44.99	123.1	334.7	1,496.6	6.39	12.2	4.5	13.23	16.00	8.50	0.715	7.08
58	I-T	40.79	111.5	327.6	1,371.2	6.22	12.3	4.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50	I-T	36.22	97.6	327.2	1,267.4	6.10	13.0	3.9	10.65	16.24	7.07	0.628	6.17
45	I-T	32.62	87.8	320.1	1,153.3	5.91	13.1	3.6	9.59	16.12	7.04	0.563	5.57
40	I-T	28.91	78.2	313.5	1,040.0	5.71	13.3	3.3	8.50	16.00	7.00	0.503	4.91
36	I-T	26.45	69.3	303.8	928.7	5.45	13.4	3.1	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58	T	58.04	156.8	323.2	1,650.0	6.38	10.5	5.1	17.07	15.00	10.50	0.850	8.46
54	T	53.99	143.5	317.9	1,536.2	6.25	10.7	4.8	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68	I-T	45.24	117.8	298.3	1,248.6	5.83	10.6	4.2	13.31	14.16	10.04	0.718	5.87
61	I-T	40.54	106.6	291.5	1,133.7	5.66	10.6	3.9	11.92	13.90	10.00	0.643	5.25



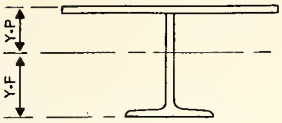
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

25.5# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53	I-T	36.44	91.7	285.2	1,010.8	5.44	11.0	3.5	10.72	13.94	8.06	0.658	5.15
48	I-T	32.98	82.9	279.1	921.8	5.27	11.1	3.3	9.70	13.80	8.03	0.593	4.68
43	I-T	29.60	74.1	272.7	833.6	5.09	11.2	3.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38	I-T	27.05	66.2	273.1	785.6	5.00	11.9	2.9	7.96	14.12	6.78	0.513	4.41
34	I-T	24.30	59.0	266.2	706.3	4.81	12.0	2.7	7.15	14.00	6.75	0.453	4.01
30	I-T	21.69	51.4	257.3	620.5	4.56	12.1	2.4	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47	T	46.95	108.0	252.7	966.4	5.09	9.0	3.8	13.81	12.15	9.06	0.872	6.26
42	T	41.99	96.4	247.5	878.7	4.95	9.1	3.6	12.35	12.04	9.01	0.772	5.65
38	T	38.01	86.4	242.5	801.3	4.81	9.3	3.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50	I-T	33.81	76.6	245.6	747.4	4.73	9.8	3.0	9.94	12.18	8.08	0.641	4.52
45	I-T	30.39	68.8	239.9	678.0	4.58	9.9	2.8	8.94	12.06	8.04	0.576	4.05
40	I-T	26.89	61.2	234.5	610.0	4.41	10.0	2.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36	I-T	24.94	55.4	233.8	576.1	4.33	10.4	2.5	7.34	12.24	6.56	0.540	3.73
31	I-T	21.43	47.6	226.1	499.4	4.10	10.5	2.2	6.30	12.08	6.52	0.465	3.20
27	I-T	18.80	41.3	218.5	436.5	3.88	10.6	2.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22	I-T	16.80	32.9	208.8	367.0	3.60	11.2	1.8	4.94	12.30	4.03	0.424	3.20
19	I-T	14.76	28.2	199.2	315.4	3.37	11.2	1.6	4.34	12.16	4.01	0.349	2.91
16.5	I-T	13.11	23.7	187.4	266.0	3.12	11.2	1.4	3.86	12.00	4.00	0.269	2.76
14	I-T	11.22	20.1	178.7	226.7	2.91	11.3	1.3	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5	T	36.48	74.8	212.4	622.0	4.27	8.3	2.9	10.73	10.62	8.29	0.740	4.83
34	T	34.03	69.7	209.7	585.9	4.19	8.4	2.8	10.01	10.57	8.27	0.685	4.54
31	T	31.01	63.2	205.6	537.3	4.06	8.5	2.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45	I-T	29.46	58.3	198.6	484.5	3.88	8.3	2.4	8.66	10.12	8.02	0.618	3.54
39	I-T	25.64	50.1	191.0	419.5	3.68	8.4	2.2	7.54	9.94	7.99	0.528	3.16
33	I-T	21.93	41.8	181.9	352.5	3.43	8.4	1.9	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29	I-T	19.99	37.7	184.7	339.7	3.40	9.0	1.8	5.88	10.22	5.80	0.500	2.95
25	I-T	17.19	32.3	177.4	292.9	3.21	9.1	1.7	5.06	10.08	5.76	0.430	2.54
21	I-T	14.79	26.7	166.5	241.9	2.95	9.1	1.5	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19	I-T	14.22	24.3	165.6	230.1	2.89	9.5	1.4	4.18	10.24	4.02	0.394	2.56
17	I-T	12.81	21.2	157.6	200.8	2.72	9.5	1.3	3.77	10.12	4.01	0.329	2.42
15	I-T	11.55	18.4	149.1	174.0	2.55	9.5	1.2	3.40	10.00	4.00	0.269	2.30
11.5	I-T	8.93	14.1	136.4	134.0	2.27	9.5	1.0	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30	T	29.99	54.2	175.6	403.6	3.54	7.4	2.3	8.82	9.12	7.56	0.695	3.79
27.5	T	27.51	49.6	172.5	373.2	3.44	7.5	2.2	8.09	9.06	7.53	0.630	3.53
25	T	24.99	45.1	169.2	342.5	3.34	7.6	2.0	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39	T	38.96	64.0	161.0	402.4	3.40	6.3	2.5	11.46	8.16	8.59	0.875	4.31
35.5	T	35.46	58.4	157.9	371.3	3.31	6.4	2.4	10.43	8.08	8.54	0.795	3.92
32	T	31.96	52.9	154.7	339.8	3.22	6.4	2.2	9.40	8.00	8.50	0.715	3.54
29	T	28.97	48.0	151.6	311.8	3.12	6.5	2.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25	T	24.99	41.2	150.9	283.2	3.03	6.9	1.9	7.35	8.13	7.07	0.628	3.08
22.5	T	22.51	37.0	147.2	256.8	2.92	6.9	1.7	6.62	8.06	7.04	0.563	2.78
20	T	19.99	33.1	143.8	232.1	2.81	7.0	1.6	5.88	8.00	7.00	0.503	2.45
18	T	18.36	29.5	138.7	208.0	2.69	7.1	1.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28	I-T	18.42	29.5	141.8	212.4	2.71	7.2	1.5	5.42	8.06	6.54	0.463	2.29
24	I-T	15.75	25.2	135.3	181.7	2.54	7.2	1.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20	I-T	13.71	21.2	131.5	160.0	2.41	7.5	1.2	4.03	8.14	5.27	0.378	2.80
17	I-T	11.82	17.7	122.9	133.7	2.23	7.5	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15	I-T	11.11	15.5	117.9	119.9	2.12	7.7	1.0	3.27	8.12	4.01	0.314	1.98
13	I-T	9.79	13.2	109.8	101.5	1.96	7.7	0.9	2.88	8.00	4.00	0.254	1.84
10	I-T	7.44	10.2	100.1	79.2	1.76	7.7	0.8	2.19	7.90	3.94	0.204	1.34



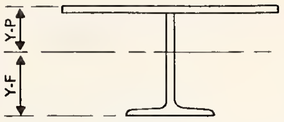
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

60t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x6 3/4x19 T	19.01	28.2	123.1	176.3	2.46	6.3	1.4	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.2	119.7	158.7	2.36	6.3	1.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.8	114.6	138.4	2.23	6.3	1.2	4.41	6.93	6.73	0.383	1.87
7 x4 x 8.6 T	8.60	11.0	91.1	74.9	1.70	6.8	0.8	2.53	7.00	4.00	0.272	1.47
7 x2 1/8x 5.5 I-T	4.27	4.9	62.6	34.8	1.19	7.1	0.6	1.25	7.00	2.08	0.188	0.88
6 x6 1/2x18 T	17.99	24.0	104.0	131.5	2.14	5.5	1.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.7	99.6	114.3	2.02	5.5	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.0	95.3	100.1	1.91	5.6	1.1	3.98	5.98	6.50	0.400	1.43
6 x4 x16 I-T	11.07	13.2	88.4	78.7	1.72	6.0	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.5	88.0	79.2	1.72	5.9	0.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.4	81.8	66.9	1.60	5.9	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.5	75.3	56.1	1.47	5.9	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.4	74.9	55.4	1.46	5.9	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.0	69.5	47.2	1.36	5.9	0.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.7	62.9	39.0	1.24	5.8	0.6	1.77	5.82	3.94	0.194	0.99
6 x3 x 5.9 T	5.85	6.5	63.1	38.8	1.24	6.0	0.6	1.72	6.00	3.06	0.175	1.05
5 x5 3/4x14.5 T	14.52	16.5	79.3	78.2	1.68	4.7	1.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.2	75.0	67.4	1.58	4.8	0.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.6	69.0	55.4	1.45	4.8	0.8	3.10	4.95	5.75	0.340	1.18
5 x4 x 9.5 T	9.52	10.2	67.1	50.8	1.39	5.0	0.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.8	62.4	43.8	1.30	5.0	0.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.5	57.6	37.5	1.21	5.0	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.8	50.3	28.9	1.07	5.0	0.6	1.69	4.94	3.95	0.204	0.89
5 x2 3/4x 4.5 T	4.49	4.3	43.0	22.1	0.94	5.1	0.5	1.32	5.00	2.68	0.204	0.77
4 x5 1/4x10 T	10.00	9.4	52.8	37.4	1.19	4.0	0.7	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.8	48.2	31.2	1.10	4.0	0.6	2.50	4.00	5.25	0.308	0.92
4 x4 x 7.5 T	7.55	6.6	44.9	27.1	1.03	4.1	0.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.6	40.5	22.7	0.95	4.1	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.5	35.6	18.1	0.85	4.1	0.5	1.48	3.95	3.94	0.204	0.67
4 x2 1/4x 3.25 T	3.26	2.7	26.2	11.4	0.68	4.2	0.4	0.96	4.00	2.28	0.189	0.54
3 1/2x2 1/8x 2.75 T	2.74	2.1	19.6	8.0	0.57	3.7	0.4	0.80	3.50	2.08	0.175	0.44
3 x4 x 8 T	8.02	5.9	33.4	18.9	0.86	3.2	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.3	27.2	13.6	0.73	3.1	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.1	21.7	9.6	0.62	3.1	0.4	1.25	2.92	3.94	0.194	0.49
3 x1 7/8x 2.2 T	2.21	1.6	13.7	5.2	0.47	3.2	0.4	0.65	3.00	1.84	0.167	0.34

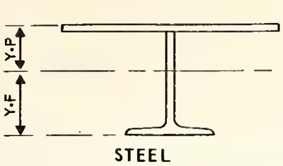


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

28.05# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
30 x 10 1/2 x 132 I-T	99.55	440.3	842.6	8,961.0	12.46	20.4	10.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	413.3	828.6	8,506.8	12.33	20.6	10.3	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	385.4	813.1	8,023.6	12.15	20.8	9.9	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	355.7	795.6	7,498.6	11.92	21.1	9.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	450.1	762.2	7,801.2	11.56	17.3	10.2	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	349.8	738.0	6,637.1	11.15	19.0	9.0	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	313.6	719.2	6,059.2	10.92	19.3	8.4	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	288.1	704.9	5,641.8	10.71	19.6	8.0	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	371.1	672.9	5,962.8	10.43	16.1	8.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	340.5	665.7	5,629.5	10.28	16.5	8.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	313.4	653.5	5,262.9	10.14	16.8	8.1	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	285.4	640.7	4.875.2	9.96	17.1	7.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	261.9	635.5	4,630.2	9.73	17.7	7.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	234.1	619.8	4,208.8	9.49	18.0	6.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	210.9	605.2	3,846.1	9.23	18.2	6.4	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	282.6	567.7	4,092.4	8.97	14.5	7.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	234.1	552.3	3,588.5	8.55	15.3	6.5	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	200.2	533.0	3,135.9	8.26	15.7	5.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	181.5	533.3	2,969.8	8.19	16.4	5.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	169.2	525.3	2,790.5	8.03	16.5	5.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	153.7	514.9	2,564.2	7.82	16.7	5.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 I-T	75.07	238.7	473.4	2,953.1	7.65	12.4	6.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	251.6	496.7	3,201.1	7.91	12.7	6.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	231.7	487.1	2,984.5	7.78	12.9	6.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	211.8	477.4	2,765.4	7.63	13.1	5.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	184.7	470.1	2,520.1	7.39	13.6	5.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	167.8	460.6	2,317.6	7.22	13.8	5.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	152.2	450.8	2,126.0	7.04	14.0	4.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	139.1	442.7	1,963.4	6.86	14.1	4.4	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	130.9	444.1	1,913.9	6.81	14.6	4.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	119.7	435.5	1,766.4	6.63	14.8	4.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	108.7	427.2	1,619.3	6.43	14.9	3.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	213.8	435.9	2,488.5	7.11	11.6	5.7	20.76	16.66	11.53	0.960	10.07
65 T	65.04	194.6	428.4	2,307.0	6.97	11.9	5.4	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	191.3	426.7	2,246.4	6.89	11.7	5.3	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	174.8	417.9	2,076.2	6.74	11.9	5.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	152.3	411.1	1,890.3	6.51	12.4	4.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	138.5	402.1	1,735.2	6.35	12.5	4.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	124.6	393.0	1,579.1	6.16	12.7	4.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	112.8	384.7	1,442.9	5.98	12.8	3.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	98.6	383.7	1,328.3	5.83	13.5	3.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	88.7	375.2	1,205.5	5.63	13.6	3.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	78.9	367.1	1,083.8	5.42	13.7	3.0	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	69.9	355.1	965.6	5.17	13.8	2.7	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	159.0	380.4	1,759.5	6.22	11.1	4.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	145.5	373.9	1,633.7	6.07	11.2	4.4	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	119.2	350.6	1,320.7	5.63	11.1	3.8	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	107.7	342.5	1,195.4	5.44	11.1	3.5	11.92	13.90	10.00	0.643	5.25

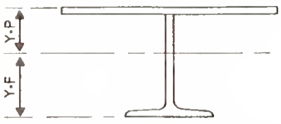


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
14 x 8 x 53 I-T	36.44	92.7	334.3	1,061.5	5.21	11.5	3.2	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	83.7	327.0	965.4	5.03	11.5	3.0	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	74.8	319.0	870.5	4.84	11.6	2.7	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	66.8	318.9	818.1	4.74	12.2	2.6	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	59.5	310.3	733.7	4.54	12.3	2.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	51.8	299.1	642.8	4.30	12.4	2.1	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	109.4	297.2	1,026.3	4.93	9.4	3.5	13.81	12.15	9.06	0.872	6.26
42 T	41.99	97.6	290.8	929.8	4.78	9.5	3.2	12.35	12.04	9.01	0.772	5.65
38 T	38.01	87.4	284.6	845.2	4.62	9.7	3.0	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	77.4	287.3	784.2	4.52	10.1	2.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	69.4	280.3	709.5	4.36	10.2	2.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	61.8	273.5	636.3	4.19	10.3	2.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	55.9	272.1	599.6	4.10	10.7	2.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	48.0	262.3	518.0	3.86	10.8	2.0	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	41.6	252.5	451.5	3.65	10.8	1.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	33.2	239.7	378.4	3.37	11.4	1.6	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.4	227.5	324.4	3.15	11.4	1.4	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.0	212.6	273.2	2.91	11.4	1.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.3	201.4	232.4	2.71	11.4	1.2	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	75.7	248.8	656.1	4.09	8.7	2.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	70.5	245.4	616.7	4.01	8.7	2.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	63.9	240.2	564.0	3.88	8.8	2.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	58.9	231.4	507.6	3.70	8.6	2.2	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	50.6	221.8	438.0	3.49	8.7	2.0	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	42.2	210.2	366.6	3.24	8.7	1.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	38.1	212.8	352.3	3.21	9.3	1.7	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.6	203.5	302.8	3.01	9.3	1.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.9	189.6	249.5	2.76	9.3	1.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.5	187.9	237.0	2.70	9.7	1.3	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.4	177.8	206.5	2.53	9.6	1.2	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.6	167.2	178.7	2.37	9.6	1.1	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.2	150.9	137.2	2.10	9.6	0.9	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	54.8	204.6	424.0	3.38	7.7	2.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	50.2	200.6	391.1	3.27	7.8	2.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	45.5	196.2	358.0	3.16	7.9	1.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	64.9	188.2	427.0	3.27	6.6	2.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	59.2	184.3	392.9	3.18	6.6	2.1	10.43	8.08	8.54	0.795	3.92
32 T	31.96	53.5	180.2	358.4	3.08	6.7	2.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	48.5	176.2	328.0	2.98	6.8	1.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	41.6	174.6	296.4	2.88	7.1	1.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	37.4	169.8	268.1	2.77	7.2	1.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.4	165.2	241.7	2.66	7.2	1.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.8	158.7	216.2	2.53	7.3	1.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.8	162.1	220.5	2.55	7.4	1.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.5	153.7	188.1	2.39	7.4	1.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.4	148.2	165.1	2.26	7.7	1.1	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.9	137.5	137.7	2.08	7.7	1.0	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.7	131.1	123.4	1.97	7.9	0.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.3	121.1	104.3	1.83	7.8	0.9	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.4	108.7	81.2	1.63	7.8	0.7	2.19	7.90	3.94	0.204	1.34



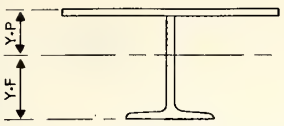
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTIDN MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 19 T	19.01	28.5	140.7	183.7	2.32	6.4	1.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.5	136.2	164.9	2.22	6.5	1.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.0	129.5	143.4	2.09	6.5	1.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.2	99.6	77.1	1.58	6.9	0.8	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	5.0	65.2	35.7	1.10	7.1	0.5	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	24.3	118.1	137.2	2.02	5.6	1.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.0	112.3	118.9	1.90	5.7	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.2	106.7	103.8	1.79	5.7	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	13.4	97.4	81.4	1.60	6.1	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.6	97.1	81.9	1.61	6.0	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.5	89.5	69.1	1.49	6.0	0.8	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.7	81.6	57.9	1.37	6.0	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.6	81.1	57.2	1.36	6.0	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.1	74.5	48.7	1.26	6.0	0.7	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	6.8	66.7	40.2	1.15	5.9	0.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.6	66.8	40.0	1.15	6.1	0.6	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.7	88.6	81.5	1.58	4.9	0.9	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.4	83.2	70.1	1.48	4.9	0.8	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.8	75.6	57.5	1.35	4.9	0.8	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.3	73.1	52.7	1.30	5.1	0.7	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.9	67.4	45.4	1.21	5.1	0.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.7	61.7	38.8	1.13	5.1	0.6	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.9	53.0	30.0	1.00	5.1	0.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.4	44.7	22.9	0.88	5.2	0.5	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.6	57.3	39.0	1.12	4.1	0.7	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	8.0	51.9	32.5	1.03	4.1	0.6	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.8	47.8	28.3	0.96	4.2	0.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.7	42.8	23.7	0.88	4.1	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.6	37.1	18.9	0.80	4.1	0.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.8	26.8	12.0	0.64	4.2	0.4	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.3	20.1	8.5	0.54	3.8	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	6.1	35.6	19.9	0.80	3.3	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.5	28.6	14.3	0.69	3.2	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.3	22.6	10.3	0.59	3.2	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.7	14.2	5.7	0.44	3.3	0.4	0.65	3.00	1.84	0.167	0.34



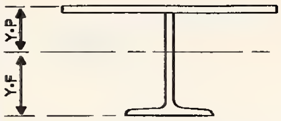
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

30.6# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
30 x 10 1/2 x 132	I-T	99.55	447.2	968.7	9,499.7	12.28	21.2	9.8	29.28	30.30	10.55	1.000	18.63
124	I-T	93.60	419.6	953.6	9,007.0	12.12	21.5	9.4	27.53	30.16	10.52	0.930	17.64
116	I-T	88.15	391.1	936.6	8,484.0	11.92	21.7	9.1	25.93	30.00	10.50	0.850	16.92
108	I-T	82.89	360.9	917.1	7,916.9	11.67	21.9	8.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145	I-T	102.05	456.6	878.3	8,300.1	11.41	18.2	9.5	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114	I-T	85.05	354.8	850.6	7,017.8	10.93	19.8	8.2	25.01	27.28	10.07	0.932	15.54
102	I-T	76.19	317.8	830.1	6,391.1	10.67	20.1	7.7	22.41	27.06	10.02	0.827	14.02
94	I-T	70.53	291.8	814.3	5,939.8	10.44	20.4	7.3	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130	I-T	89.83	376.0	777.2	6,333.1	10.26	16.8	8.1	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120	I-T	84.70	345.0	768.6	5,965.4	10.08	17.3	7.8	24.91	24.30	12.09	0.930	13.51
110	I-T	77.50	317.3	755.5	5,565.9	9.92	17.5	7.4	22.80	24.16	12.04	0.855	12.32
100	I-T	70.48	288.8	741.4	5,144.0	9.72	17.8	6.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94	I-T	69.66	265.2	734.0	4,876.2	9.48	18.4	6.6	20.49	24.28	9.06	0.872	12.53
84	I-T	62.38	236.9	716.4	4,420.9	9.21	18.7	6.2	18.35	24.08	9.01	0.772	11.32
76	I-T	56.81	213.4	699.9	4,030.6	8.94	18.9	5.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112	I-T	76.27	286.0	656.8	4,334.0	8.78	15.2	6.6	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96	I-T	70.15	237.1	637.4	3,783.2	8.34	16.0	5.9	20.63	21.14	9.04	0.935	12.15
82	I-T	59.86	202.5	615.9	3,293.8	8.01	16.3	5.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73	I-T	53.96	183.6	616.4	3,110.3	7.92	16.9	5.0	15.87	21.24	8.29	0.740	9.66
68	I-T	50.40	171.0	607.2	2,917.8	7.75	17.1	4.8	14.82	21.12	8.27	0.685	9.08
62	I-T	46.04	155.2	595.1	2,675.2	7.52	17.2	4.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75	T	75.07	241.8	548.1	3,132.7	7.49	13.0	5.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114	I-T	77.40	254.8	574.1	3,393.4	7.75	13.3	5.9	22.77	18.48	11.83	0.991	10.99
105	I-T	71.22	234.5	563.4	3,157.3	7.60	13.5	5.6	20.95	18.32	11.79	0.911	10.14
96	I-T	65.10	214.2	552.4	2,918.9	7.43	13.6	5.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85	I-T	60.34	186.8	543.0	2,650.7	7.17	14.2	4.9	17.75	18.32	8.84	0.911	9.63
77	I-T	54.46	169.6	532.2	2,431.8	6.99	14.3	4.6	16.02	18.16	8.79	0.831	8.62
70	I-T	49.48	153.7	520.9	2,225.5	6.79	14.5	4.3	14.55	18.00	8.75	0.751	7.88
64	I-T	45.19	140.5	511.5	2,050.9	6.60	14.6	4.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60	I-T	43.76	132.2	512.7	1,996.2	6.54	15.1	3.9	12.87	18.24	7.56	0.695	7.59
55	I-T	40.26	120.9	502.4	1,838.8	6.35	15.2	3.7	11.84	18.12	7.53	0.630	7.06
50	I-T	36.58	109.7	492.6	1,682.1	6.15	15.3	3.4	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5	T	70.58	216.5	504.9	2,638.0	6.96	12.2	5.2	20.76	16.66	11.53	0.960	10.07
65	T	65.04	197.0	496.1	2,439.1	6.79	12.4	4.9	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96	I-T	64.24	193.5	493.6	2,372.5	6.71	12.3	4.8	18.89	16.32	11.53	0.875	8.73
88	I-T	59.02	176.7	483.4	2,187.8	6.54	12.4	4.5	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78	I-T	54.99	154.1	474.5	1,985.2	6.31	12.9	4.2	16.17	16.32	8.59	0.875	8.63
71	I-T	49.98	139.9	464.2	1,818.2	6.13	13.0	3.9	14.70	16.16	8.54	0.795	7.85
64	I-T	44.99	125.9	453.5	1,650.4	5.93	13.1	3.6	13.23	16.00	8.50	0.715	7.08
58	I-T	40.79	113.8	443.6	1,504.5	5.73	13.2	3.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50	I-T	36.22	99.5	441.7	1,380.2	5.58	13.9	3.1	10.65	16.24	7.07	0.628	6.17
45	I-T	32.62	89.4	431.5	1,249.8	5.37	14.0	2.9	9.59	16.12	7.04	0.563	5.57
40	I-T	28.91	79.5	421.4	1,120.8	5.15	14.1	2.7	8.50	16.00	7.00	0.503	4.91
36	I-T	26.45	70.5	406.8	996.7	4.90	14.1	2.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58	T	58.04	160.9	440.2	1,855.7	6.04	11.5	4.2	17.07	15.00	10.50	0.850	8.46
54	T	53.99	147.1	432.3	1,719.0	5.89	11.7	4.0	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68	I-T	45.24	120.3	404.7	1,383.1	5.42	11.5	3.4	13.31	14.16	10.04	0.718	5.87
61	I-T	40.54	108.7	395.0	1,248.4	5.23	11.5	3.2	11.92	13.90	10.00	0.643	5.25

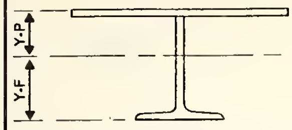


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

30.6# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x8 x53	I-T	36.44	93.5	384.6	1,104.9	4.98	11.8	2.9	10.72	13.94	8.06	0.658	5.15
48	I-T	32.98	84.4	375.6	1,002.6	4.80	11.9	2.7	9.70	13.80	8.03	0.593	4.68
43	I-T	29.60	75.4	365.8	902.0	4.61	12.0	2.5	8.70	13.68	8.00	0.528	4.21
14 x6 3/4x38	I-T	27.05	67.4	364.9	845.7	4.50	12.6	2.3	7.96	14.12	6.78	0.513	4.41
34	I-T	24.30	60.0	354.2	756.8	4.30	12.6	2.1	7.15	14.00	6.75	0.453	4.01
30	I-T	21.69	52.2	340.3	661.7	4.06	12.7	1.9	6.38	13.86	6.73	0.383	3.74
12 x9 x47	T	46.95	110.5	343.1	1,078.5	4.76	9.8	3.1	13.81	12.15	9.06	0.872	6.26
42	T	41.99	98.5	335.3	974.1	4.60	9.9	2.9	12.35	12.04	9.01	0.772	5.65
38	T	38.01	88.3	327.6	882.9	4.43	10.0	2.7	11.18	11.95	8.98	0.682	5.26
12 x8 x50	I-T	33.81	78.0	329.5	815.8	4.32	10.5	2.5	9.94	12.18	8.08	0.641	4.52
45	I-T	30.39	70.0	320.9	736.3	4.15	10.5	2.3	8.94	12.06	8.04	0.576	4.05
40	I-T	26.89	62.3	312.3	658.7	3.98	10.6	2.1	7.91	11.94	8.00	0.516	3.51
12 x6 1/2x36	I-T	24.94	56.4	310.1	619.5	3.88	11.0	2.0	7.34	12.24	6.56	0.540	3.73
31	I-T	21.43	48.4	297.7	533.7	3.65	11.0	1.8	6.30	12.08	6.52	0.465	3.20
27	I-T	18.80	42.0	285.4	464.2	3.44	11.1	1.6	5.53	11.94	6.50	0.400	2.86
12 x4 x22	I-T	16.80	33.4	269.0	388.1	3.17	11.6	1.4	4.94	12.30	4.03	0.424	3.20
19	I-T	14.76	28.6	253.8	332.2	2.95	11.6	1.3	4.34	12.16	4.01	0.349	2.91
16.5	I-T	13.11	24.2	235.8	279.4	2.73	11.6	1.2	3.86	12.00	4.00	0.269	2.76
14	I-T	11.22	20.5	221.6	237.3	2.53	11.6	1.1	3.30	11.90	3.97	0.224	2.38
10 1/2x8 1/4x36.5	T	36.48	76.4	285.6	685.6	3.93	9.0	2.4	10.73	10.62	8.29	0.740	4.83
34	T	34.03	71.2	281.4	643.3	3.83	9.0	2.3	10.01	10.57	8.27	0.685	4.54
31	T	31.01	64.5	274.9	586.9	3.70	9.1	2.1	9.12	10.49	8.24	0.615	4.19
10 x8 x45	I-T	29.46	59.4	264.0	527.4	3.53	8.9	2.0	8.66	10.12	8.02	0.618	3.54
39	I-T	25.64	51.0	252.1	453.8	3.32	8.9	1.8	7.54	9.94	7.99	0.528	3.16
33	I-T	21.93	42.6	237.6	378.7	3.07	8.9	1.6	6.45	9.74	7.96	0.433	2.84
10 x5 3/4x29	I-T	19.99	38.4	239.8	363.1	3.03	9.5	1.5	5.88	10.22	5.80	0.500	2.95
25	I-T	17.19	32.9	228.0	311.4	2.83	9.5	1.4	5.06	10.08	5.76	0.430	2.54
21	I-T	14.79	27.1	210.9	256.0	2.59	9.4	1.2	4.35	9.90	5.75	0.340	2.37
10 x4 x19	I-T	14.22	24.7	208.3	243.0	2.53	9.8	1.2	4.18	10.24	4.02	0.394	2.56
17	I-T	12.81	21.6	196.1	211.5	2.37	9.8	1.1	3.77	10.12	4.01	0.329	2.42
15	I-T	11.55	18.7	183.2	182.8	2.22	9.8	1.0	3.40	10.00	4.00	0.269	2.30
11.5	I-T	8.93	14.4	163.1	140.2	1.96	9.8	0.9	2.63	9.86	3.95	0.204	1.77
9 x7 1/2x30	T	29.99	55.4	233.3	441.6	3.22	8.0	1.9	8.82	9.12	7.56	0.695	3.79
27.5	T	27.51	50.6	228.2	406.6	3.12	8.0	1.8	8.09	9.06	7.53	0.630	3.53
25	T	24.99	46.0	222.6	371.4	3.01	8.1	1.7	7.35	9.00	7.50	0.570	3.22
8 x8 1/2x39	T	38.96	65.7	215.7	448.5	3.15	6.8	2.1	11.46	8.16	8.59	0.875	4.31
35.5	T	35.46	59.9	210.8	411.7	3.05	6.9	2.0	10.43	8.08	8.54	0.795	3.92
32	T	31.96	54.1	205.5	374.5	2.95	6.9	1.8	9.40	8.00	8.50	0.715	3.54
29	T	28.97	49.0	200.4	342.0	2.84	7.0	1.7	8.52	7.93	8.46	0.645	3.22
8 x7 x25	T	24.99	42.0	197.6	307.9	2.74	7.3	1.6	7.35	8.13	7.07	0.628	3.08
22.5	T	22.51	37.8	191.5	277.9	2.62	7.4	1.5	6.62	8.06	7.04	0.563	2.78
20	T	19.99	33.8	185.5	249.9	2.51	7.4	1.3	5.88	8.00	7.00	0.503	2.45
18	T	18.36	30.1	177.4	223.3	2.39	7.4	1.3	5.40	7.93	6.99	0.428	2.31
8 x6 1/2x28	I-T	18.42	30.1	181.0	227.6	2.41	7.6	1.3	5.42	8.06	6.54	0.463	2.29
24	I-T	15.75	25.7	170.5	193.7	2.25	7.5	1.1	4.63	7.92	6.50	0.398	1.92
8 x5 1/4x20	I-T	13.71	21.6	163.3	169.7	2.12	7.9	1.0	4.03	8.14	5.27	0.378	2.80
17	I-T	11.82	18.1	150.2	141.3	1.95	7.8	0.9	3.48	8.00	5.25	0.308	1.92
8 x4 x15	I-T	11.11	15.9	142.4	126.6	1.85	8.0	0.9	3.27	8.12	4.01	0.314	1.98
13	I-T	9.79	13.5	130.5	106.9	1.71	7.9	0.8	2.88	8.00	4.00	0.254	1.84
10	I-T	7.44	10.5	115.5	83.1	1.52	7.9	0.7	2.19	7.90	3.94	0.204	1.34



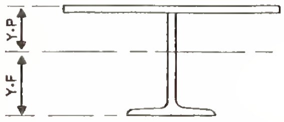
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

30.6# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x6 3/4x19	T	19.01	28.8	157.2	190.2	2.20	6.6	1.2	5.59	7.06	6.78	0.513	2.20
17	T	17.00	25.7	151.3	170.4	2.10	6.6	1.1	5.00	7.00	6.75	0.453	2.00
15	T	14.99	22.3	142.9	148.0	1.97	6.6	1.0	4.41	6.93	6.73	0.383	1.87
7 x4 x 8.6	T	8.60	11.3	106.4	79.2	1.48	7.0	0.7	2.53	7.00	4.00	0.272	1.47
7 x2 1/8x 5.5	I-T	4.27	5.1	67.0	36.7	1.02	7.2	0.5	1.25	7.00	2.08	0.188	0.88
6 x6 1/2x18	T	17.99	24.6	131.1	142.2	1.91	5.8	1.1	5.29	6.12	6.56	0.560	1.86
15.5	T	15.50	21.2	123.8	123.0	1.79	5.8	1.0	4.56	6.04	6.52	0.465	1.60
13.5	T	13.53	18.4	116.8	107.2	1.69	5.8	0.9	3.98	5.98	6.50	0.400	1.43
6 x4 x16	I-T	11.07	13.5	105.1	83.8	1.51	6.2	0.8	3.26	6.24	4.03	0.404	1.62
11	T	11.02	13.8	104.9	84.4	1.51	6.1	0.8	3.24	6.16	4.03	0.424	1.60
9.5	T	9.55	11.7	95.8	71.2	1.40	6.1	0.7	2.81	6.08	4.01	0.349	1.46
12	I-T	8.47	9.8	86.6	59.6	1.28	6.1	0.7	2.49	6.00	4.00	0.279	1.38
8.25	T	8.26	9.7	86.0	58.9	1.28	6.1	0.7	2.43	6.00	4.00	0.269	1.38
7	T	7.04	8.3	78.4	50.1	1.18	6.1	0.6	2.07	5.96	3.97	0.224	1.19
8.5	I-T	6.03	6.9	69.5	41.5	1.08	6.0	0.6	1.77	5.82	3.94	0.194	0.99
6 x3 x 5.9	T	5.85	6.7	69.5	41.2	1.08	6.2	0.6	1.72	6.00	3.06	0.175	1.05
5 x5 3/4x14.5	T	14.52	16.9	96.8	84.5	1.49	5.0	0.9	4.27	5.11	5.80	0.500	1.47
12.5	T	12.48	14.6	90.1	72.6	1.39	5.0	0.8	3.67	5.04	5.76	0.430	1.27
10.5	T	10.54	12.0	81.1	59.5	1.27	5.0	0.7	3.10	4.95	5.75	0.340	1.18
5 x4 x 9.5	T	9.52	10.5	77.9	54.4	1.22	5.2	0.7	2.80	5.13	4.02	0.394	1.28
8.5	T	8.47	9.1	71.3	46.9	1.14	5.2	0.7	2.49	5.06	4.01	0.329	1.21
7.5	T	7.48	7.8	64.8	40.2	1.06	5.1	0.6	2.20	5.00	4.00	0.269	1.15
5.75	T	5.75	6.1	55.0	31.0	0.94	5.1	0.6	1.69	4.94	3.95	0.204	0.89
5 x2 3/4x 4.5	T	4.49	4.6	45.8	23.8	0.82	5.2	0.5	1.32	5.00	2.68	0.204	0.77
4 x5 1/4x10	T	10.00	9.8	61.1	40.6	1.05	4.2	0.7	2.94	4.07	5.27	0.378	1.00
8.5	T	8.50	8.2	54.7	33.9	0.97	4.1	0.6	2.50	4.00	5.25	0.308	0.92
4 x4 x 7.5	T	7.55	7.0	50.2	29.4	0.90	4.2	0.6	2.22	4.06	4.01	0.314	0.99
6.5	T	6.49	5.9	44.6	24.7	0.83	4.2	0.6	1.91	4.00	4.00	0.254	0.92
5	T	5.03	4.7	38.3	19.8	0.75	4.2	0.5	1.48	3.95	3.94	0.204	0.67
4 x2 1/4x 3.25	T	3.26	3.0	27.4	12.7	0.60	4.3	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2x2 1/8x 2.75	T	2.74	2.4	20.6	9.1	0.51	3.8	0.4	0.80	3.50	2.08	0.175	0.44
3 x4 x 8	T	8.02	6.3	37.4	21.0	0.76	3.3	0.6	2.36	3.13	4.03	0.404	0.81
6	T	6.02	4.7	29.8	15.2	0.65	3.2	0.5	1.77	3.00	4.00	0.279	0.69
4.25	T	4.25	3.4	23.4	11.0	0.56	3.2	0.5	1.25	2.92	3.94	0.194	0.49
3 x1 7/8x 2.2	T	2.21	1.9	14.8	6.3	0.43	3.3	0.4	0.65	3.00	1.84	0.167	0.34



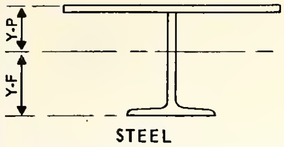
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	912.9	1,539.4	19,699.2	14.31	21.6	12.8	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	838.4	1,505.1	18,369.2	14.12	21.9	12.2	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	762.5	1,475.0	17,027.3	13.90	22.3	11.5	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	578.8	1,418.6	14,131.1	13.33	24.4	10.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	539.4	1,391.5	13,284.8	13.11	24.6	9.5	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	490.1	1,362.5	12,246.0	12.77	25.0	9.0	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	606.2	1,298.6	12,709.7	12.47	21.0	9.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	458.4	1,249.8	10,455.2	11.79	22.8	8.4	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	429.8	1,232.0	9,888.3	11.60	23.0	8.0	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	400.3	1,211.2	9,290.0	11.37	23.2	7.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	369.3	1,186.6	8,644.6	11.09	23.4	7.3	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	467.0	1,137.0	9,188.2	11.00	19.7	8.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	362.8	1,100.4	7,682.8	10.41	21.2	7.0	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	324.5	1,075.5	6,964.3	10.09	21.5	6.5	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	297.8	1,055.5	6,450.7	9.84	21.7	6.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	383.9	1,008.7	6,984.0	9.82	18.2	6.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	352.3	996.6	6,552.5	9.62	18.6	6.6	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	323.5	980.7	6,090.6	9.41	18.8	6.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	294.2	963.1	5,605.3	9.17	19.1	5.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	270.6	950.3	5,298.1	8.93	19.6	5.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	241.4	928.0	4,781.1	8.62	19.8	5.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	217.2	906.3	4,341.5	8.32	20.0	4.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	291.5	853.0	4,752.7	8.34	16.3	5.6	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	242.0	823.9	4,118.6	7.87	17.0	5.0	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	206.3	796.2	3,561.9	7.49	17.3	4.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	186.9	796.2	3,346.8	7.36	17.9	4.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	173.9	783.8	3,130.7	7.18	18.0	4.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	157.8	767.2	2,860.0	6.93	18.1	3.7	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	246.9	711.2	3,444.7	7.12	14.0	4.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	259.9	743.9	3,728.2	7.37	14.3	5.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	239.0	730.1	3,455.8	7.19	14.5	4.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	218.1	715.8	3,181.9	6.99	14.6	4.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	190.3	700.9	2,873.2	6.72	15.1	4.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	172.5	686.6	2,624.8	6.51	15.2	3.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	156.3	671.3	2,392.6	6.29	15.3	3.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	142.7	658.1	2,196.7	6.09	15.4	3.3	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	134.4	658.3	2,133.2	6.02	15.9	3.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	122.8	643.9	1,958.8	5.82	16.0	3.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	111.3	629.7	1,785.6	5.61	16.0	2.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	220.9	655.2	2,896.5	6.59	13.1	4.4	20.76	16.66	11.53	0.960	10.07
65 T	65.04	200.8	642.9	2,666.1	6.40	13.3	4.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	197.0	638.6	2,588.9	6.32	13.1	4.1	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	179.8	624.8	2,378.0	6.13	13.2	3.8	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	156.9	610.6	2,146.3	5.88	13.7	3.5	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	142.4	596.5	1,958.0	5.68	13.8	3.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	128.0	581.5	1,769.8	5.47	13.8	3.0	13.23	16.00	8.50	0.715	7.08

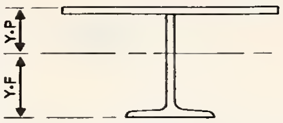


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
16 x 8 1/2 x 58 I-T	40.79	115.6	567.4	1,607.2	5.27	13.9	2.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	101.1	562.5	1,466.3	5.09	14.5	2.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	90.7	547.5	1,322.9	4.88	14.6	2.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	80.6	532.3	1,181.8	4.66	14.7	2.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	71.5	510.9	1,047.9	4.42	14.7	2.1	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	163.9	568.6	2,019.9	5.66	12.3	3.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	149.8	557.3	1,863.9	5.49	12.4	3.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	122.3	518.8	1,488.0	5.01	12.2	2.9	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	110.3	504.7	1,337.0	4.81	12.1	2.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	94.9	488.5	1,177.2	4.56	12.4	2.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	85.6	475.1	1,064.3	4.37	12.4	2.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	76.4	460.5	954.0	4.18	12.5	2.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	68.3	457.1	891.3	4.07	13.0	1.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	60.8	441.0	795.1	3.87	13.1	1.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	53.0	420.3	693.0	3.64	13.1	1.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	112.5	439.4	1,166.9	4.42	10.4	2.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	100.2	427.7	1,048.7	4.24	10.5	2.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	89.7	416.0	946.4	4.07	10.6	2.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	79.2	415.4	868.7	3.94	11.0	2.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	71.1	402.5	781.2	3.77	11.0	1.9	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	63.1	389.3	696.2	3.60	11.0	1.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	57.2	384.5	652.9	3.50	11.4	1.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	49.0	365.6	560.1	3.27	11.4	1.5	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	42.5	347.0	485.6	3.07	11.4	1.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.0	322.3	404.7	2.82	11.9	1.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.1	300.5	345.7	2.62	11.9	1.2	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.6	275.4	290.4	2.41	11.8	1.1	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.8	255.0	246.1	2.24	11.8	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	77.8	360.7	735.3	3.60	9.5	2.0	10.73	10.62	8.29	0.740	4.83
34 T	34.03	72.4	354.1	688.1	3.51	9.5	1.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	65.5	344.0	625.6	3.37	9.5	1.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	60.4	328.5	561.0	3.21	9.3	1.7	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	51.9	310.7	480.6	3.00	9.3	1.5	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	43.2	289.3	399.4	2.76	9.2	1.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	39.0	290.9	381.5	2.71	9.8	1.3	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	33.4	272.4	326.2	2.53	9.8	1.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	27.6	248.1	267.6	2.31	9.7	1.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.2	243.5	253.5	2.25	10.1	1.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.0	226.5	220.5	2.11	10.0	1.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.1	209.1	190.4	1.96	10.0	0.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.7	181.4	145.8	1.73	9.9	0.8	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	56.4	289.8	471.6	2.93	8.4	1.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	51.5	281.8	432.9	2.83	8.4	1.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	46.8	273.0	394.3	2.72	8.4	1.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	67.0	270.8	485.5	2.91	7.2	1.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	61.1	263.3	443.9	2.81	7.3	1.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	55.1	255.1	402.3	2.70	7.3	1.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	50.0	247.2	366.0	2.59	7.3	1.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	42.9	241.2	327.7	2.48	7.6	1.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	38.5	231.8	294.9	2.37	7.7	1.3	6.62	8.06	7.04	0.563	2.78



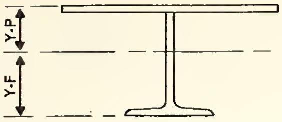
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 7 x 20 T	19.99	34.4	222.5	264.4	2.26	7.7	1.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	30.7	210.9	235.7	2.14	7.7	1.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	30.7	214.9	240.0	2.16	7.8	1.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.2	199.6	203.8	2.01	7.8	1.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	22.1	188.4	178.0	1.89	8.1	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	18.5	170.6	148.1	1.73	8.0	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	16.2	160.1	132.6	1.64	8.2	0.8	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.8	144.6	112.0	1.51	8.1	0.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.8	124.7	87.0	1.34	8.1	0.7	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	29.4	186.5	201.7	1.98	6.9	1.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.3	177.6	180.3	1.88	6.9	1.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.8	165.6	156.2	1.76	6.9	0.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.6	116.3	83.4	1.31	7.2	0.7	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.2	153.7	151.4	1.72	6.0	1.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.8	143.2	130.6	1.61	6.0	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.9	133.3	113.7	1.51	6.0	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	14.0	116.7	88.7	1.34	6.4	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.2	116.8	89.3	1.35	6.3	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.1	105.1	75.4	1.24	6.2	0.7	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.2	93.6	63.2	1.14	6.2	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.1	92.9	62.4	1.14	6.2	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.6	83.5	53.2	1.05	6.2	0.6	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	7.3	73.1	44.2	0.96	6.1	0.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.0	73.0	44.0	0.96	6.3	0.6	1.72	6.00	3.06	0.175	1.05

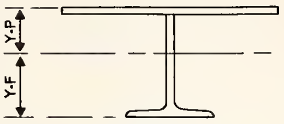


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40.8# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240	I-T	170.91	933.9	1,914.5	21,656.0	14.01	23.2	11.3	50.27	33.50	15.86	1.400	27.80
220	I-T	157.07	856.8	1,875.6	20,137.0	13.77	23.5	10.7	46.20	33.24	15.81	1.275	25.76
200	I-T	143.50	778.2	1,840.5	18,597.0	13.49	23.9	10.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152	I-T	114.31	590.2	1,773.1	15,277.8	12.77	25.9	8.6	33.62	33.50	11.56	1.055	21.27
141	I-T	106.62	549.7	1,741.6	14,331.9	12.53	26.1	8.2	31.36	33.30	11.53	0.960	24.15
130	I-T	99.11	499.2	1,705.2	13,168.0	12.15	26.4	7.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172	I-T	121.81	617.6	1,625.7	13,820.5	12.01	22.4	8.5	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132	I-T	99.55	466.9	1,562.8	11,251.9	11.23	24.1	7.2	29.28	30.30	10.55	1.000	18.63
124	I-T	93.60	437.5	1,541.2	10,617.9	11.01	24.3	6.9	27.53	30.16	10.52	0.930	17.64
116	I-T	88.15	407.4	1,515.3	9,952.7	10.76	24.4	6.6	25.93	30.00	10.50	0.850	16.92
108	I-T	82.89	375.6	1,484.2	9,239.1	10.46	24.6	6.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145	I-T	102.05	475.0	1,424.8	9,931.8	10.50	20.9	7.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114	I-T	85.05	369.0	1,375.9	8,228.4	9.84	22.3	6.0	25.01	27.28	10.07	0.932	15.54
102	I-T	76.19	329.7	1,344.7	7,429.2	9.49	22.5	5.5	22.41	27.06	10.02	0.827	14.02
94	I-T	70.53	302.3	1,319.0	6,861.8	9.22	22.7	5.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130	I-T	89.83	390.0	1,264.2	7,522.2	9.33	19.3	6.0	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120	I-T	84.70	357.8	1,247.5	7,035.0	9.10	19.7	5.6	24.91	24.30	12.09	0.930	13.51
110	I-T	77.50	328.3	1,227.5	6,517.7	8.87	19.9	5.3	22.80	24.16	12.04	0.855	12.32
100	I-T	70.48	298.3	1,204.8	5,977.2	8.60	20.0	5.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94	I-T	69.66	274.7	1,185.5	5,638.3	8.37	20.5	4.8	20.49	24.28	9.06	0.872	12.53
84	I-T	62.38	244.9	1,156.4	5,068.7	8.04	20.7	4.4	18.35	24.08	9.01	0.772	11.32
76	I-T	56.81	220.2	1,127.6	4,587.9	7.73	20.8	4.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112	I-T	76.27	295.7	1,066.7	5,094.1	7.86	17.2	4.8	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96	I-T	70.15	245.9	1,025.3	4,390.5	7.38	17.9	4.3	20.63	21.14	9.04	0.935	12.15
82	I-T	59.86	209.3	988.8	3,776.3	6.98	18.0	3.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73	I-T	53.96	189.4	986.9	3,534.4	6.83	18.7	3.6	15.87	21.24	8.29	0.740	9.66
68	I-T	50.40	176.2	970.1	3,298.9	6.64	18.7	3.4	14.82	21.12	8.27	0.685	9.08
62	I-T	46.04	159.8	947.2	3,005.2	6.39	18.8	3.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75	T	75.07	250.8	888.1	3,700.2	6.71	14.8	4.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114	I-T	77.40	264.0	927.9	4,003.0	6.95	15.2	4.3	22.77	18.48	11.83	0.991	10.99
105	I-T	71.22	242.5	909.8	3,699.0	6.76	15.3	4.1	20.95	18.32	11.79	0.911	10.14
96	I-T	65.10	221.1	890.7	3,394.5	6.55	15.3	3.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85	I-T	60.34	193.1	868.7	3,052.3	6.27	15.8	3.5	17.75	18.32	8.84	0.911	9.63
77	I-T	54.46	174.9	849.2	2,778.9	6.05	15.9	3.3	16.02	18.16	8.79	0.831	8.62
70	I-T	49.48	158.3	828.1	2,525.3	5.82	16.0	3.0	14.55	18.00	8.75	0.751	7.88
64	I-T	45.19	144.5	809.7	2,312.0	5.62	16.0	2.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60	I-T	43.76	136.1	808.2	2,241.5	5.55	16.5	2.8	12.87	18.24	7.56	0.695	7.59
55	I-T	40.26	124.3	788.2	2,053.3	5.35	16.5	2.6	11.84	18.12	7.53	0.630	7.06
50	I-T	36.58	112.7	767.9	1,866.9	5.14	16.6	2.4	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65	T	65.04	203.8	799.4	2,850.2	6.00	14.0	3.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88	I-T	59.02	182.3	774.0	2,531.4	5.72	13.9	3.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78	I-T	54.99	159.2	752.9	2,275.8	5.47	14.3	3.0	16.17	16.32	8.59	0.875	8.63
71	I-T	49.98	144.4	733.5	2,069.8	5.26	14.3	2.8	14.70	16.16	8.54	0.795	7.85
64	I-T	44.99	129.7	712.6	1,864.8	5.05	14.4	2.6	13.23	16.00	8.50	0.715	7.08
58	I-T	40.79	117.1	692.8	1,688.6	4.84	14.4	2.4	12.00	15.86	8.46	0.645	6.45



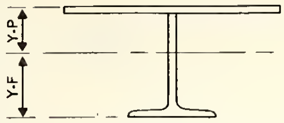
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
16 x 7 x 50 I-T	36.22	102.3	682.9	1,534.4	4.66	15.0	2.2	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	91.9	661.4	1,380.8	4.45	15.0	2.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	81.6	639.1	1,230.0	4.24	15.1	1.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	72.3	609.5	1,088.6	4.01	15.1	1.8	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	166.4	703.4	2,152.7	5.29	12.9	3.1	17.07	15.00	10.50	0.850	8.46
54 T	53.99	152.0	687.3	1,980.6	5.11	13.0	2.9	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	123.9	634.9	1,572.0	4.63	12.7	2.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	111.6	614.9	1,407.8	4.42	12.6	2.3	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	96.1	591.0	1,235.0	4.18	12.9	2.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	86.7	571.8	1,113.7	4.00	12.9	1.9	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	77.4	550.9	995.8	3.81	12.9	1.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	69.2	543.6	927.9	3.70	13.4	1.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	61.6	520.8	826.0	3.51	13.4	1.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	53.6	491.9	718.5	3.29	13.4	1.5	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	114.2	536.7	1,238.5	4.10	10.8	2.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	101.7	519.7	1,108.9	3.91	10.9	2.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	91.0	502.8	997.7	3.74	11.0	2.0	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	80.3	498.0	911.4	3.61	11.3	1.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	72.0	479.5	817.6	3.44	11.4	1.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	64.0	460.4	726.6	3.27	11.4	1.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	57.9	452.2	680.1	3.18	11.7	1.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	49.7	425.3	582.0	2.96	11.7	1.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	43.1	399.4	503.6	2.77	11.7	1.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.5	365.7	419.0	2.54	12.2	1.1	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.6	336.9	357.6	2.36	12.1	1.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	25.0	304.9	300.2	2.17	12.0	1.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.2	278.3	254.3	2.00	12.0	0.9	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	79.0	432.9	775.9	3.31	9.8	1.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	73.5	423.2	724.7	3.22	9.9	1.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	66.5	408.7	657.3	3.08	9.9	1.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	61.3	387.8	588.7	2.93	9.6	1.5	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	52.6	363.1	503.0	2.73	9.6	1.4	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	43.9	333.6	416.9	2.50	9.5	1.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	39.6	332.2	397.3	2.46	10.0	1.2	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	34.0	308.1	339.1	2.28	10.0	1.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	28.1	276.5	277.9	2.08	9.9	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.6	269.7	263.2	2.02	10.3	1.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.4	248.4	228.9	1.89	10.2	0.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.5	226.8	197.7	1.77	10.1	0.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	15.0	192.5	151.4	1.56	10.1	0.8	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	57.3	341.3	496.6	2.69	8.7	1.5	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	52.4	329.9	455.0	2.58	8.7	1.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	47.6	317.4	413.6	2.48	8.7	1.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	68.3	323.1	516.5	2.69	7.6	1.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	62.2	312.3	471.1	2.59	7.6	1.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	56.1	300.5	425.8	2.48	7.6	1.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	50.9	289.1	386.5	2.38	7.6	1.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	43.7	278.9	344.7	2.26	7.9	1.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	39.2	265.8	309.6	2.16	7.9	1.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	35.1	252.8	277.2	2.05	7.9	1.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.3	237.6	246.9	1.94	7.9	1.0	5.40	7.93	6.99	0.428	2.31



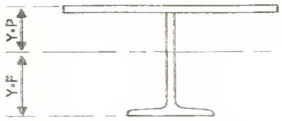
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 6 1/2 x 28 I-T	18.42	31.3	241.9	251.2	1.96	8.0	1.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.8	221.7	213.0	1.82	8.0	1.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	22.6	206.6	185.9	1.70	8.2	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	19.0	184.5	154.7	1.56	8.2	0.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	16.7	171.8	138.6	1.48	8.3	0.8	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	14.2	153.4	117.3	1.37	8.2	0.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	11.1	129.8	91.4	1.21	8.2	0.7	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	30.1	209.8	212.1	1.80	7.0	1.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.9	197.9	189.5	1.71	7.0	1.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.3	182.4	164.1	1.60	7.0	0.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	12.1	122.3	87.9	1.19	7.3	0.7	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.9	171.2	160.0	1.57	6.2	0.9	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	22.4	157.5	137.9	1.46	6.2	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	19.5	145.0	120.1	1.37	6.2	0.8	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	14.5	124.4	93.8	1.22	6.5	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.8	124.7	94.5	1.22	6.4	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.6	111.0	79.9	1.13	6.4	0.7	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.7	98.0	67.3	1.04	6.3	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.5	97.1	66.5	1.03	6.3	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	9.0	86.6	56.9	0.96	6.3	0.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	7.7	75.4	47.6	0.88	6.2	0.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.4	75.2	47.3	0.88	6.4	0.6	1.72	6.00	3.06	0.175	1.05



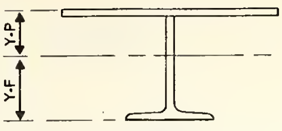
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	950.6	2,329.9	23,376.6	13.61	24.6	10.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	871.3	2,285.0	21,676.9	13.32	24.9	9.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	790.7	2,243.4	19,950.9	12.99	25.2	8.9	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	599.2	2,160.9	16,244.0	12.18	27.1	7.5	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	557.8	2,123.6	15,208.2	11.91	27.3	7.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	506.4	2,077.7	13,934.6	11.52	27.5	6.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	626.6	1,983.6	14,763.7	11.49	23.6	7.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	473.6	1,902.1	11,916.0	10.64	25.2	6.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	443.6	1,875.4	11,222.9	10.41	25.3	6.0	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	412.9	1,843.0	10,499.5	10.15	25.4	5.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	380.7	1,803.7	9,727.3	9.85	25.6	5.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	481.3	1,736.6	10,554.1	9.98	21.9	6.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	373.9	1,671.2	8,678.4	9.27	23.2	5.2	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	333.8	1,631.3	7,809.5	8.91	23.4	4.8	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	305.9	1,598.2	7,196.5	8.63	23.5	4.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	394.8	1,538.3	7,968.8	8.82	20.2	5.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	362.3	1,515.5	7,433.6	8.59	20.5	4.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	332.2	1,489.8	6,868.2	8.34	20.7	4.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	301.6	1,460.1	6,280.5	8.06	20.8	4.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	278.1	1,433.1	5,916.0	7.83	21.3	4.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	247.7	1,394.8	5,302.1	7.50	21.4	3.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	222.7	1,356.7	4,787.1	7.19	21.5	3.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	299.2	1,292.3	5,375.4	7.39	18.0	4.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	249.0	1,235.8	4,613.9	6.91	18.5	3.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	211.8	1,187.3	3,951.2	6.50	18.7	3.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	191.6	1,181.8	3,686.7	6.34	19.2	3.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	178.2	1,159.0	3.435.3	6.15	19.3	3.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	161.5	1,127.9	3,122.7	5.91	19.3	2.8	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	254.0	1,072.7	3,911.9	6.32	15.4	3.6	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	267.3	1,120.7	4,230.9	6.55	15.8	3.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	245.4	1,096.9	3,899.6	6.34	15.9	3.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	223.7	1,071.5	3,569.1	6.13	16.0	3.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	195.4	1,040.3	3,199.2	5.84	16.4	3.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	176.9	1,013.9	2,905.0	5.62	16.4	2.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	160.1	985.3	2,633.6	5.39	16.5	2.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	146.0	959.9	2,406.1	5.19	16.5	2.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	137.6	956.1	2,329.8	5.12	16.9	2.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	125.7	928.8	2,130.5	4.93	17.0	2.3	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	113.9	900.8	1,933.4	4.72	17.0	2.1	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	206.4	960.2	3,002.1	5.62	14.5	3.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	184.4	925.6	2,657.7	5.34	14.4	2.9	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	161.1	895.8	2,382.6	5.09	14.8	2.7	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	146.1	869.5	2,161.9	4.88	14.8	2.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	131.2	841.1	1,943.1	4.67	14.8	2.3	13.23	16.00	8.50	0.715	7.08



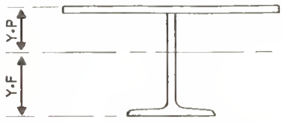
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
16 x 8 1/2 x 58 I-T	40.79	118.4	813.8	1,755.7	4.47	14.8	2.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	103.5	797.1	1,590.7	4.29	15.4	2.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	92.9	767.7	1,428.8	4.09	15.4	1.9	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	82.5	736.6	1,270.3	3.88	15.4	1.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	73.1	697.7	1,122.8	3.66	15.4	1.6	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	168.5	839.3	2,262.5	4.93	13.4	2.7	17.07	15.00	10.50	0.850	8.46
54 T	53.99	153.9	817.3	2,077.1	4.76	13.5	2.5	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	125.4	747.9	1,641.5	4.29	13.1	2.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	112.9	720.4	1,466.6	4.09	13.0	2.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	97.2	687.1	1,283.2	3.85	13.2	1.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	87.7	660.9	1,155.1	3.67	13.2	1.7	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	78.3	632.4	1,031.0	3.49	13.2	1.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	70.0	620.3	959.0	3.38	13.7	1.5	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	62.3	589.8	852.6	3.20	13.7	1.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	54.3	551.9	740.8	3.00	13.6	1.3	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	115.8	630.8	1,298.5	3.80	11.2	2.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	103.0	607.1	1,159.5	3.62	11.3	1.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	92.2	583.7	1,040.9	3.46	11.3	1.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	81.3	573.3	947.7	3.32	11.7	1.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	72.9	548.4	848.7	3.16	11.6	1.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	64.8	522.3	753.0	3.00	11.6	1.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	58.7	510.1	703.8	2.91	12.0	1.4	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	50.4	474.4	601.3	2.70	11.9	1.3	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	43.7	441.0	519.9	2.53	11.9	1.2	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	35.0	398.5	432.2	2.31	12.3	1.1	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	30.1	363.2	368.9	2.14	12.3	1.0	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	25.5	325.1	309.9	1.97	12.2	1.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.7	293.2	262.6	1.82	12.1	0.9	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	80.1	498.9	810.7	3.06	10.1	1.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	74.6	485.6	756.2	2.97	10.1	1.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	67.5	465.9	684.8	2.84	10.1	1.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	62.2	439.4	613.0	2.69	9.8	1.4	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	53.5	407.2	522.9	2.50	9.8	1.3	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	44.7	369.4	432.9	2.29	9.7	1.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	40.3	365.3	411.9	2.24	10.2	1.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	34.6	335.0	351.4	2.08	10.2	1.0	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	28.6	296.7	288.0	1.89	10.1	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	26.2	288.0	272.7	1.84	10.4	0.9	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	23.0	262.9	237.4	1.73	10.3	0.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	20.0	238.2	205.3	1.61	10.3	0.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	15.5	198.8	157.7	1.42	10.2	0.8	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	58.3	385.9	518.8	2.47	8.9	1.3	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	53.3	370.6	474.8	2.38	8.9	1.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	48.4	354.1	431.1	2.28	8.9	1.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	69.6	370.2	543.8	2.49	7.8	1.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	63.4	355.6	495.1	2.39	7.8	1.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	57.2	339.7	446.8	2.29	7.8	1.3	9.40	8.00	8.50	0.715	3.54
29 T	28.97	51.9	324.6	405.1	2.19	7.8	1.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	44.5	309.9	360.3	2.08	8.1	1.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	40.0	293.0	323.5	1.98	8.1	1.1	6.62	8.06	7.04	0.563	2.78

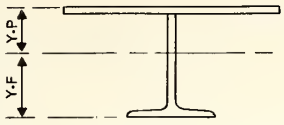


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 7 x 20 T	19.99	35.8	276.3	289.3	1.88	8.1	1.0	5.88	8.00	7.00	0.503	2.45
18 T	18.36	32.0	257.8	257.8	1.78	8.1	1.0	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	32.0	262.2	262.1	1.79	8.2	1.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	27.4	237.5	222.3	1.66	8.1	0.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	23.2	219.0	194.0	1.56	8.4	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	19.5	193.5	161.8	1.43	8.3	0.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	17.2	179.1	145.2	1.35	8.4	0.8	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	14.8	158.8	123.2	1.25	8.3	0.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	11.6	132.8	96.4	1.11	8.3	0.7	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	30.9	227.4	222.4	1.65	7.2	1.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	27.6	212.8	198.7	1.57	7.2	0.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	24.0	194.3	172.2	1.46	7.2	0.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	12.6	126.1	93.2	1.09	7.4	0.7	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	26.7	184.3	168.7	1.44	6.3	0.9	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	23.1	167.9	145.6	1.35	6.3	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	20.2	153.3	126.9	1.26	6.3	0.8	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	15.1	129.6	99.5	1.12	6.6	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.4	130.1	100.3	1.13	6.5	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	13.2	115.2	85.2	1.04	6.5	0.7	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	11.3	101.2	72.2	0.96	6.4	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	11.1	100.3	71.3	0.95	6.4	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	9.6	89.2	61.4	0.89	6.4	0.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	8.2	77.5	51.8	0.82	6.3	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.90 T	5.85	8.0	77.3	51.5	0.81	6.5	0.7	1.72	6.00	3.06	0.175	1.05



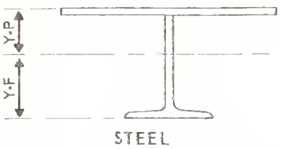
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,298.5	3,156.1	34,932.0	14.93	26.9	11.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,213.5	3,109.4	32,949.8	14.70	27.2	10.6	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,124.2	3,053.1	30,802.8	14.40	27.4	10.1	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,057.1	3,013.6	29,198.5	14.18	27.6	9.7	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	992.3	2,973.1	27,625.1	13.93	27.8	9.3	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	824.6	2,899.9	24,224.9	13.29	29.4	8.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	773.3	2,863.0	22,875.4	13.04	29.6	8.0	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	722.1	2,825.2	21,515.7	12.78	29.8	7.6	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	677.9	2,785.0	20,308.9	12.52	30.0	7.3	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	633.4	2,743.3	19,085.5	12.23	30.1	7.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	964.1	2,780.8	24,878.2	13.14	25.8	8.9	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	883.1	2,728.3	23,010.4	12.82	26.1	8.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	800.8	2,678.2	21,114.1	12.46	26.4	7.9	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	606.5	2,575.5	17,059.3	11.57	28.1	6.6	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	564.4	2,530.7	15,944.0	11.29	28.2	6.3	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	512.2	2,473.0	14.575.4	10.89	28.5	5.9	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	776.5	2,469.4	18,685.7	11.66	24.1	7.6	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	701.5	2,417.3	17,056.2	11.31	24.3	7.1	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	633.9	2,366.6	15,564.7	10.96	24.6	6.6	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	479.1	2,261.0	12,472.7	10.07	26.0	5.5	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	448.6	2,227.6	11,728.0	9.83	26.1	5.3	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	417.5	2,187.0	10,954.6	9.57	26.2	5.0	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	384.8	2,137.6	10,132.5	9.26	26.3	4.7	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	486.5	2,066.1	11,077.4	9.46	22.8	5.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	377.9	1,979.3	9,053.4	8.73	24.0	4.6	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	337.2	1,928.0	8,124.8	8.36	24.1	4.2	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	309.0	1,885.4	7,473.3	8.08	24.2	4.0	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	398.8	1,824.7	8,342.6	8.33	20.9	4.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	366.0	1,794.1	7,766.6	8.09	21.2	4.3	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	335.5	1,760.8	7,159.9	7.84	21.3	4.1	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	304.4	1,721.9	6,532.1	7.55	21.5	3.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	280.9	1,685.9	6,146.7	7.34	21.9	3.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	250.1	1,635.8	5,495.4	7.00	22.0	3.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	224.8	1,586.0	4,951.9	6.70	22.0	3.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	302.2	1,523.5	5,610.5	6.95	18.6	3.7	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	251.7	1,448.8	4,800.7	6.48	19.1	3.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	213.9	1,385.1	4,097.1	6.07	19.2	3.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	193.4	1,373.9	3,813.6	5.90	19.7	2.8	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	179.9	1,343.7	3,548.9	5.72	19.7	2.6	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	163.0	1,302.5	3,220.8	5.48	19.8	2.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	256.9	1,259.6	4,090.1	5.94	15.9	3.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	270.2	1,316.8	4,422.8	6.16	16.4	3.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	248.0	1,285.7	4,068.3	5.96	16.4	3.2	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	226.0	1,252.2	3,715.7	5.74	16.4	3.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	197.5	1,209.9	3,322.7	5.46	16.8	2.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	178.7	1,174.7	3,011.0	5.24	16.8	2.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	161.7	1,136.9	2,724.8	5.02	16.9	2.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	147.4	1,103.0	2,485.4	4.82	16.9	2.3	13.29	17.86	8.71	0.686	7.20

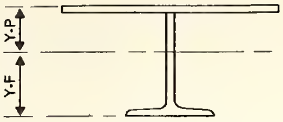


PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	139.0	1,096.0	2,404.5	4.75	17.3	2.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	126.9	1,060.2	2,196.0	4.56	17.3	2.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	115.0	1,023.0	1,990.1	4.36	17.3	1.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	208.6	1,119.9	3,130.3	5.27	15.0	2.8	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	186.3	1,074.2	2,764.4	4.99	14.8	2.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	162.9	1,034.1	2,473.0	4.74	15.2	2.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	147.7	999.4	2,240.1	4.54	15.2	2.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	132.6	961.8	2,009.7	4.33	15.2	2.1	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	119.7	925.9	1,813.2	4.14	15.2	2.0	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	104.6	900.7	1,639.2	3.96	15.7	1.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	93.9	862.1	1,470.5	3.77	15.7	1.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	83.4	821.2	1,305.6	3.57	15.7	1.6	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	73.9	772.4	1,153.3	3.37	15.6	1.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	170.4	971.5	2,355.7	4.61	13.8	2.4	17.07	15.00	10.50	0.850	8.46
54 T	53.99	155.7	942.3	2,159.2	4.44	13.9	2.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	126.8	853.4	1,701.3	3.99	13.4	2.0	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	114.1	817.0	1,517.3	3.79	13.3	1.9	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	98.3	773.2	1,325.3	3.56	13.5	1.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	88.7	739.1	1,191.6	3.39	13.4	1.6	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	79.2	702.4	1,062.3	3.22	13.4	1.5	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	70.9	684.8	987.0	3.12	13.9	1.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	63.1	646.3	876.7	2.95	13.9	1.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	55.0	599.6	761.4	2.76	13.8	1.3	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	117.3	717.9	1,350.6	3.54	11.5	1.9	13.81	12.15	9.06	0.872	6.26
42 T	41.99	104.3	686.5	1,203.8	3.37	11.5	1.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	93.4	655.9	1,079.1	3.21	11.6	1.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	82.4	638.8	980.0	3.07	11.9	1.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	73.9	606.9	876.8	2.92	11.9	1.4	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	65.7	573.5	777.0	2.76	11.8	1.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	59.6	557.1	725.8	2.68	12.2	1.3	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	51.1	512.8	619.6	2.49	12.1	1.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	44.4	472.2	535.6	2.32	12.1	1.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	35.7	421.8	445.5	2.12	12.5	1.1	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	30.7	380.9	380.4	1.97	12.4	1.0	4.34	12.16	4.34	0.349	2.91
16.5 I-T	13.11	26.0	338.0	320.1	1.81	12.3	0.9	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	22.2	302.1	271.6	1.67	12.3	0.9	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	81.3	556.6	842.0	2.84	10.4	1.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	75.7	539.3	784.7	2.75	10.4	1.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	68.5	514.2	709.9	2.63	10.4	1.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	63.2	482.1	635.5	2.49	10.1	1.3	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	54.4	442.4	541.8	2.31	10.0	1.2	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	45.5	396.8	448.4	2.12	9.9	1.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	41.1	390.1	426.2	2.07	10.4	1.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	35.3	354.2	363.7	1.92	10.3	1.0	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	29.3	310.4	298.6	1.74	10.2	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	26.8	300.1	282.8	1.70	10.5	0.9	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	23.6	272.3	246.5	1.59	10.5	0.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	20.6	245.1	213.7	1.48	10.4	0.9	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	59.3	422.7	539.6	2.29	9.1	1.3	8.82	9.12	7.56	0.695	3.79



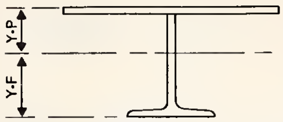
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	54.3	403.6	493.5	2.20	9.1	1.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	49.3	383.1	448.0	2.10	9.1	1.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	70.9	410.9	569.0	2.33	8.0	1.4	11.46	8.16	8.59	0.875	4.31
35 T	35.46	64.6	392.3	517.6	2.23	8.0	1.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	58.4	372.3	466.7	2.13	8.0	1.3	9.40	8.00	8.50	0.715	3.54
29 T	28.97	53.0	353.5	422.8	2.03	8.0	1.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	45.5	334.2	375.6	1.93	8.3	1.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	40.9	313.8	337.2	1.83	8.2	1.1	6.62	8.06	7.04	0.563	2.78
20 T	19.99	36.7	293.8	301.6	1.74	8.2	1.0	5.88	8.00	7.00	0.503	2.45
18 T	18.36	32.8	272.5	269.0	1.65	8.2	1.0	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	32.8	276.9	273.3	1.66	8.3	1.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	28.2	248.6	232.1	1.54	8.2	0.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	23.9	227.4	202.8	1.44	8.5	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	20.2	199.5	169.7	1.32	8.4	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	17.9	184.0	152.7	1.25	8.5	0.8	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	31.8	240.5	233.2	1.53	7.3	1.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	28.5	223.6	208.5	1.45	7.3	0.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	24.8	202.8	181.1	1.36	7.3	0.9	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	27.6	194.1	178.2	1.34	6.5	0.9	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	24.0	175.6	154.1	1.25	6.4	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	21.1	159.5	134.7	1.17	6.4	0.8	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	15.9	133.8	106.3	1.05	6.7	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	16.2	134.4	107.1	1.05	6.6	0.8	3.24	6.16	4.03	0.424	1.60



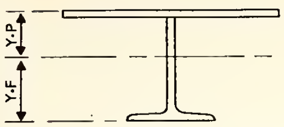
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,315.5	3,701.2	36,973.6	14.48	28.1	10.0	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,228.7	3,648.1	34,811.7	14.22	28.3	9.5	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,137.8	3,582.7	32,481.5	13.90	28.5	9.1	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,069.4	3,536.8	30,739.6	13.65	28.7	8.7	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,003.5	3,489.3	29,035.7	13.39	28.9	8.3	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	834.3	3,396.2	25,353.1	12.71	30.4	7.5	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	782.0	3,352.4	23,902.2	12.45	30.6	7.1	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	729.9	3,307.1	22,443.4	12.18	30.7	6.8	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	685.0	3,258.6	21,155.3	11.90	30.9	6.5	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	639.8	3,207.8	19,851.7	11.61	31.0	6.2	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	975.4	3,261.3	26,185.1	12.65	26.8	8.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	892.9	3,199.2	24,164.1	12.30	27.1	7.6	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	809.2	3,138.3	22,114.4	11.92	27.3	7.0	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	612.6	3,009.4	17,751.3	10.99	29.0	5.9	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	569.9	2,955.1	16,566.2	10.70	29.1	5.6	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	517.1	2,883.2	15,115.8	10.30	29.2	5.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	785.0	2,892.5	19,606.0	11.17	25.0	6.8	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	708.7	2,829.7	17,849.6	10.81	25.2	6.3	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	640.1	2,767.7	16,248.1	10.43	25.4	5.9	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	483.8	2,631.8	12,943.6	9.52	26.8	4.9	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	452.8	2,590.1	12,154.4	9.29	26.8	4.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	421.3	2,539.4	11,338.1	9.02	26.9	4.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	388.4	2,477.9	10,473.6	8.72	27.0	4.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	491.0	2,406.3	11,521.6	8.96	23.5	4.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	381.4	2,292.5	9,370.1	8.23	24.6	4.1	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	340.1	2,227.0	8,390.5	7.86	24.7	3.8	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	311.6	2,172.7	7,706.4	7.58	24.7	3.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	402.3	2,116.4	8,659.5	7.87	21.5	4.1	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	369.2	2,076.3	8,048.6	7.63	21.8	3.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	338.3	2,033.2	7,406.5	7.37	21.9	3.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	306.9	1,982.8	6,744.5	7.09	22.0	3.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	283.4	1,936.7	6,342.0	6.88	22.4	3.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	252.3	1,872.1	5,659.1	6.55	22.4	3.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	226.7	1,808.4	5,091.7	6.26	22.5	2.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	304.8	1,753.7	5,810.4	6.54	19.1	3.3	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	254.1	1,658.1	4,960.2	6.08	19.5	3.0	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	215.9	1,576.0	4,221.8	5.68	19.6	2.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	195.2	1,557.1	3,922.2	5.51	20.1	2.5	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	181.5	1,518.2	3,646.5	5.33	20.1	2.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	164.5	1,465.2	3,305.3	5.10	20.1	2.3	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	259.4	1,443.5	4,243.1	5.60	16.4	2.9	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	272.8	1,510.4	4,587.4	5.80	16.8	3.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	250.3	1,470.4	4,212.9	5.60	16.8	2.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	228.1	1,427.2	3,841.5	5.38	16.8	2.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	199.4	1,372.0	3,429.2	5.11	17.2	2.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	180.4	1,326.4	3,102.6	4.90	17.2	2.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	163.2	1,277.9	2,804.0	4.68	17.2	2.2	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	148.8	1,234.2	2,554.7	4.49	17.2	2.1	13.29	17.86	8.71	0.686	7.20



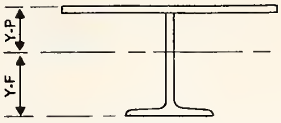
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

60t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	140.4	1,223.6	2,469.8	4.42	17.6	2.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	128.2	1,178.2	2,253.7	4.24	17.6	1.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	116.1	1,130.8	2,040.4	4.05	17.6	1.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	210.7	1,273.6	3,241.1	4.95	15.4	2.5	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	188.2	1,215.0	2,857.0	4.67	15.2	2.4	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	164.6	1,163.2	2,552.0	4.44	15.5	2.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	149.2	1,119.0	2,308.6	4.25	15.5	2.1	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	133.9	1,071.1	2,068.6	4.04	15.4	1.9	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	120.9	1,025.5	1,864.3	3.86	15.4	1.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	105.7	990.7	1,682.7	3.68	15.9	1.7	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	94.9	942.5	1,508.3	3.50	15.9	1.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	84.3	891.4	1,338.1	3.31	15.9	1.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	74.8	832.9	1,181.7	3.12	15.8	1.4	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	172.2	1,095.6	2,437.2	4.32	14.2	2.2	17.07	15.00	10.50	0.850	8.46
54 T	53.99	157.4	1,058.3	2,231.2	4.15	14.2	2.1	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	128.2	948.2	1,754.5	3.72	13.7	1.9	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	115.4	902.2	1,562.9	3.53	13.5	1.7	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	99.5	847.3	1,363.6	3.31	13.7	1.6	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	89.7	805.0	1,225.1	3.15	13.7	1.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	80.2	759.8	1,091.6	2.99	13.6	1.4	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	71.8	736.6	1,013.3	2.89	14.1	1.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	64.0	690.3	899.9	2.73	14.1	1.3	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	55.8	635.4	781.6	2.55	14.0	1.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	118.8	795.6	1,397.6	3.31	11.8	1.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	105.7	755.9	1,244.1	3.15	11.8	1.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	94.6	717.7	1,114.2	2.99	11.8	1.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	83.5	693.4	1,010.2	2.86	12.1	1.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	74.9	654.5	903.3	2.72	12.1	1.4	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	66.6	613.9	800.2	2.57	12.0	1.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	60.5	593.5	747.0	2.49	12.4	1.3	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	52.0	541.2	637.8	2.31	12.3	1.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	45.2	494.4	551.5	2.15	12.2	1.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	36.4	437.5	459.3	1.97	12.6	1.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	31.3	392.4	392.8	1.83	12.5	1.0	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	26.7	345.9	331.3	1.68	12.4	1.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	22.8	307.2	281.8	1.55	12.4	0.9	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	82.5	605.0	871.3	2.65	10.6	1.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	76.9	583.7	811.7	2.56	10.6	1.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	69.7	553.3	734.1	2.45	10.5	1.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	64.3	516.2	657.4	2.32	10.2	1.3	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	55.4	469.6	560.5	2.15	10.1	1.2	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	46.4	417.1	464.3	1.97	10.0	1.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	41.9	407.9	441.0	1.92	10.5	1.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	36.1	367.4	376.8	1.78	10.4	1.0	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	30.1	319.6	310.1	1.62	10.3	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	27.6	308.0	293.8	1.58	10.7	1.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	24.3	278.2	256.8	1.48	10.6	0.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	21.3	249.6	223.3	1.38	10.5	0.9	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	60.5	452.1	560.0	2.14	9.3	1.2	8.82	9.12	7.56	0.695	3.79



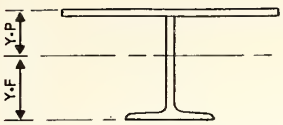
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 7 1/2 x 27.5 T	27.51	55.4	429.4	512.2	2.05	9.2	1.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	50.4	405.4	465.0	1.96	9.2	1.1	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	72.3	445.0	593.3	2.18	8.2	1.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	66.0	422.6	539.6	2.09	8.2	1.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	59.6	398.6	486.4	1.99	8.2	1.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	54.2	376.4	440.7	1.90	8.1	1.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	46.6	352.8	391.3	1.80	8.4	1.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	42.0	329.5	351.5	1.71	8.4	1.1	6.62	8.06	7.04	0.563	2.78
20 T	19.99	37.7	306.7	314.7	1.62	8.3	1.0	5.88	8.00	7.00	0.503	2.45
18 T	18.36	33.8	283.2	281.2	1.54	8.3	1.0	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	33.8	287.6	285.4	1.55	8.4	1.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	29.1	256.5	243.0	1.43	8.3	0.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	24.7	233.4	212.8	1.35	8.6	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	21.0	203.9	178.9	1.24	8.5	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	18.7	187.9	161.4	1.18	8.6	0.9	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	32.8	250.3	244.9	1.43	7.5	1.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	29.5	231.7	219.4	1.36	7.4	0.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	25.9	209.3	191.1	1.27	7.4	0.9	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	28.8	201.9	188.7	1.26	6.6	0.9	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	25.1	182.0	163.8	1.18	6.5	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	22.2	164.8	143.8	1.11	6.5	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	16.9	137.8	114.5	0.99	6.8	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	17.2	138.5	115.3	0.99	6.7	0.8	3.24	6.16	4.03	0.424	1.60



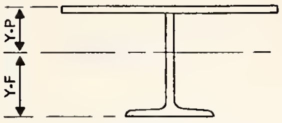
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,330.0	4,282.3	38,786.1	14.00	29.2	9.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,241.6	4,221.2	36,456.9	13.72	29.4	8.6	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,149.3	4,144.7	33,958.3	13.38	29.5	8.2	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,079.9	4,090.8	32,090.2	13.12	29.7	7.8	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,013.0	4,034.5	30,267.7	12.84	29.9	7.5	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	842.5	3,917.3	26,333.3	12.15	31.3	6.7	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	789.4	3,864.8	24,791.4	11.88	31.4	6.4	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	736.5	3,809.9	23,244.1	11.59	31.6	6.1	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	691.1	3,751.1	21,884.2	11.32	31.7	5.8	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	645.4	3,689.1	20,510.3	11.02	31.8	5.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	985.0	3,768.4	27,330.6	12.15	27.7	7.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	901.3	3,694.4	25,170.5	11.79	27.9	6.8	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	816.4	3,620.1	22,983.2	11.39	28.2	6.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	617.9	3,457.7	18,347.0	10.43	29.7	5.3	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	574.6	3,391.9	17,100.7	10.14	29.8	5.0	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	521.3	3,302.9	15,579.4	9.74	29.9	4.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	792.2	3,334.9	20,408.3	10.69	25.8	6.1	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	714.9	3,258.7	18,538.2	10.31	25.9	5.7	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	645.4	3,182.7	16,839.0	9.93	26.1	5.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	487.8	3,009.5	13,349.0	9.01	27.4	4.4	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	456.5	2,957.6	12,521.0	8.78	27.4	4.2	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	424.7	2,894.9	11,667.7	8.51	27.5	4.0	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	391.5	2,819.1	10,766.7	8.22	27.5	3.8	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	494.9	2,752.5	11,904.9	8.49	24.1	4.3	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	384.5	2,605.8	9,643.2	7.76	25.1	3.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	342.8	2,523.1	8,619.7	7.40	25.1	3.4	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	314.1	2,454.9	7,907.6	7.13	25.2	3.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	405.5	2,408.7	8,933.6	7.44	22.0	3.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	372.2	2,357.2	8,292.7	7.20	22.3	3.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	340.9	2,302.2	7,619.9	6.95	22.4	3.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	309.3	2,237.9	6,928.5	6.67	22.4	3.1	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	285.7	2,180.7	6,511.6	6.47	22.8	3.0	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	254.3	2,099.2	5,801.7	6.15	22.8	2.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	228.5	2,019.4	5,213.9	5.86	22.8	2.6	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	307.3	1,978.8	5,984.6	6.17	19.5	3.0	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	256.3	1,859.5	5,100.0	5.72	19.9	2.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	217.7	1,756.0	4,331.7	5.33	19.9	2.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	196.8	1,727.7	4,018.3	5.16	20.4	2.3	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	183.0	1,679.0	3,733.0	4.99	20.4	2.2	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	165.9	1,613.0	3,380.9	4.77	20.4	2.1	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	261.9	1,620.8	4,377.9	5.28	16.7	2.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	275.2	1,697.8	4,732.1	5.48	17.2	2.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	252.6	1,647.5	4,340.3	5.28	17.2	2.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	230.1	1,593.2	3,952.7	5.06	17.2	2.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	201.3	1,523.5	3,523.8	4.80	17.5	2.3	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	182.1	1,466.2	3,184.5	4.59	17.5	2.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	164.7	1,405.8	2,875.2	4.38	17.5	2.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	150.2	1,351.5	2,617.3	4.20	17.4	1.9	13.29	17.86	8.71	0.686	7.20



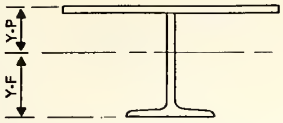
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	141.7	1,336.7	2,529.1	4.14	17.8	1.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	129.4	1,281.3	2,306.4	3.96	17.8	1.8	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	117.3	1,223.3	2,086.9	3.78	17.8	1.7	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	212.8	1,418.2	3,339.6	4.65	15.7	2.4	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	208.4	1,398.1	3,232.2	4.58	15.5	2.3	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	190.0	1,345.4	2,939.9	4.39	15.5	2.2	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	166.3	1,281.0	2,623.3	4.17	15.8	2.0	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	150.8	1,226.4	2,371.0	3.98	15.7	1.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	135.3	1,167.4	2,122.5	3.78	15.7	1.8	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	122.2	1,111.8	1,911.6	3.61	15.6	1.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	106.9	1,066.8	1,723.5	3.44	16.1	1.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	96.0	1,008.9	1,544.2	3.27	16.1	1.5	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	129.7	1,031.2	1,803.7	3.49	13.9	1.7	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	116.7	975.2	1,605.5	3.31	13.8	1.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	100.7	909.1	1,400.0	3.10	13.9	1.5	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	90.9	858.8	1,257.4	2.95	13.8	1.5	9.70	13.80	8.03	0.593	4.68
12 x 9 x 47 T	46.95	120.3	863.4	1,441.6	3.11	12.0	1.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	107.2	815.2	1,282.3	2.95	12.0	1.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	96.0	769.4	1,147.9	2.80	12.0	1.5	11.18	11.95	8.98	0.682	5.26
12 x 10 x 53 I-T	34.55	90.2	759.6	1,093.3	2.74	12.1	1.4	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	84.7	737.9	1,039.6	2.68	12.3	1.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	76.1	692.3	929.5	2.54	12.2	1.3	8.94	12.06	8.04	0.576	4.05
10 1/2 x 8 1/4 x 36.5 T	36.48	83.9	644.8	900.0	2.49	10.7	1.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	78.2	619.8	838.3	2.40	10.7	1.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	70.9	584.4	758.2	2.29	10.7	1.3	9.12	10.49	8.24	0.615	4.19
9 x 8 3/4 x 35 T	34.95	73.2	517.3	673.1	2.15	9.2	1.3	10.28	9.00	8.75	0.751	3.94
32 T	31.96	67.1	491.0	616.3	2.07	9.2	1.3	9.40	8.94	8.71	0.686	3.60
8 x 8 1/2 x 39 T	38.96	73.9	473.2	617.8	2.05	8.4	1.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	67.5	447.3	561.9	1.97	8.3	1.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	61.1	419.8	506.7	1.87	8.3	1.2	9.40	8.00	8.50	0.715	3.54



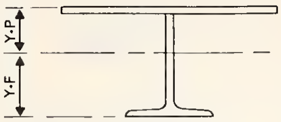
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,353.4	5,522.8	41,816.5	13.02	30.9	7.6	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,262.5	5,439.7	39,193.2	12.71	31.0	7.2	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,168.1	5,334.1	36,403.2	12.35	31.2	6.8	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,097.0	5,258.7	34.317.7	12.08	31.3	6.5	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,028.6	5,179.1	32,292.5	11.79	31.4	6.2	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	855.9	4,999.1	27,937.8	11.09	32.6	5.6	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	801.6	4,922.7	26,242.7	10.81	32.7	5.3	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	747.5	4,841.9	24,547.7	10.52	32.8	5.1	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	701.2	4,756.3	23,069.2	10.25	32.9	4.9	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	654.6	4,665.5	21,579.4	9.96	33.0	4.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,000.7	4,831.2	29,222.6	11.17	29.2	6.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	915.1	4,725.4	26,825.6	10.80	29.3	5.7	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	828.4	4,615.2	24,406.5	10.39	29.5	5.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	626.7	4,362.6	19,317.0	9.43	30.8	4.4	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	582.7	4,267.0	17,970.1	9.14	30.8	4.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	528.6	4,135.2	16,333.8	8.76	30.9	3.9	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	804.4	4,247.0	21,729.4	9.77	27.0	5.1	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	725.4	4,134.9	19,667.8	9.39	27.1	4.8	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	654.6	4,021.9	17,806.0	9.00	27.2	4.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	494.9	3,753.0	14,012.6	8.11	28.3	3.7	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	463.0	3,675.1	13,121.5	7.88	28.3	3.6	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	430.7	3,582.7	12,208.3	7.63	28.3	3.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	397.0	3,472.4	11,248.5	7.35	28.3	3.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	501.8	3,432.6	12,535.1	7.66	25.0	3.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	390.1	3,203.6	10,094.6	6.95	25.9	3.2	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	347.7	3,078.1	8,999.9	6.61	25.9	2.9	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	318.5	2,976.5	8,242.8	6.35	25.9	2.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	411.3	2,968.4	9,388.0	6.68	22.8	3.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	377.6	2,889.2	8,698.6	6.46	23.0	3.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	345.8	2,804.5	7,975.8	6.21	23.1	2.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	313.6	2,706.5	7,237.0	5.95	23.1	2.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	290.0	2,625.0	6,797.4	5.77	23.4	2.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	258.1	2,503.7	6,043.9	5.47	23.4	2.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	232.0	2,387.6	5,423.3	5.20	23.4	2.3	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	312.0	2,392.2	6,279.0	5.52	20.1	2.6	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	260.6	2,220.4	5,339.0	5.11	20.5	2.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	221.4	2,068.1	4,522.3	4.74	20.4	2.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	200.2	2,016.9	4,186.3	4.58	20.9	2.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	186.2	1,947.1	3,885.8	4.42	20.9	2.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	168.8	1,853.5	3,515.8	4.22	20.8	1.9	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	280.0	2,037.2	4,980.1	4.91	17.8	2.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	257.0	1,963.0	4,560.2	4.72	17.7	2.3	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	234.1	1,883.2	4,146.0	4.52	17.7	2.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	205.0	1,782.3	3,690.4	4.28	18.0	2.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	185.5	1,699.3	3,330.3	4.08	18.0	2.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	167.9	1,614.2	3,003.6	3.89	17.9	1.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	153.2	1,538.0	2,731.8	3.72	17.8	1.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	144.6	1,514.6	2,638.2	3.66	18.2	1.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	132.1	1,439.4	2,404.8	3.51	18.2	1.7	11.84	18.12	7.53	0.630	7.06



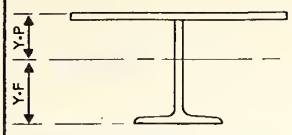
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 50 I-T	36.58	119.8	1,361.0	2,174.9	3.34	18.2	1.6	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	216.9	1,668.3	3,512.9	4.16	16.2	2.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	193.8	1,565.2	3,087.9	3.92	15.9	2.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	169.9	1,474.8	2,752.4	3.71	16.2	1.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	154.0	1,398.9	2,485.3	3.54	16.1	1.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	138.4	1,317.8	2,223.1	3.36	16.1	1.7	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	125.1	1,242.7	2,001.3	3.20	16.0	1.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	109.5	1,177.9	1,802.5	3.04	16.5	1.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	98.4	1,102.5	1,615.0	2.89	16.4	1.5	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	132.9	1,159.9	1,896.7	3.10	14.3	1.6	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	119.7	1,085.0	1,687.6	2.94	14.1	1.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	103.5	998.7	1,471.7	2.75	14.2	1.5	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	93.5	934.3	1,322.2	2.61	14.1	1.4	9.70	13.80	8.03	0.593	4.68



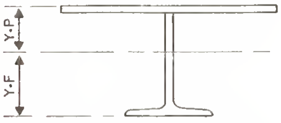
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,371.9	6,825.1	44,230.5	12.08	32.2	6.5	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,279.2	6,710.8	41,363.6	11.77	32.3	6.2	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,183.2	6,566.0	38,336.1	11.40	32.4	5.8	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,110.8	6,460.5	36,073.8	11.12	32.5	5.6	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,041.3	6,348.8	33,885.5	10.84	32.5	5.3	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	866.9	6,085.6	29,199.2	10.15	33.7	4.8	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	811.6	5,976.3	27,382.6	9.88	33.7	4.6	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	756.6	5,859.9	25,751.1	9.59	33.8	4.4	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	709.7	5,739.3	23,999.9	9.33	33.8	4.2	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	662.5	5,610.7	22,420.0	9.05	33.8	4.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,013.6	5,914.8	30,719.8	10.29	30.3	5.2	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	926.6	5,765.8	28,132.2	9.91	30.4	4.9	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	838.5	5,606.9	25,528.8	9.51	30.4	4.6	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	634.3	5,232.2	20,083.6	8.57	31.7	3.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	589.7	5,098.1	18,658.4	8.29	31.6	3.7	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	535.0	4,913.4	16,933.7	7.93	31.7	3.4	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	814.7	5,153.0	22,777.8	8.96	28.0	4.4	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	734.4	4,992.9	20,563.9	8.58	28.0	4.1	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	662.5	4,831.0	18,573.9	8.21	28.0	3.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	501.1	4,440.4	14,545.2	7.35	29.0	3.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	468.9	4,330.1	13,605.2	7.13	29.0	3.1	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	436.2	4,201.9	12,645.8	6.90	29.0	3.0	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	402.2	4,051.5	11,641.0	6.64	28.9	2.9	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	508.2	4,060.0	13,043.6	6.95	25.7	3.2	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	395.3	3,730.6	10,465.1	6.28	26.5	2.8	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	352.3	3,554.4	9,315.3	5.96	26.4	2.6	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	322.8	3,415.0	8,523.6	5.72	26.4	2.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	416.8	3,464.7	9,761.9	6.05	23.4	2.8	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	382.7	3,353.3	9,034.9	5.84	23.6	2.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	350.5	3,233.5	8,273.4	5.61	23.6	2.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	318.0	3,096.8	7,497.7	5.36	23.6	2.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	294.3	2,990.6	7,041.0	5.20	23.9	2.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	262.0	2,825.7	6,253.6	4.92	23.9	2.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	235.6	2,671.7	5,607.7	4.67	23.8	2.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	316.8	2,737.2	6,530.1	4.99	20.6	2.4	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	265.0	2,510.6	5,547.5	4.61	20.9	2.2	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	225.3	2,307.1	4,692.8	4.27	20.8	2.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	203.8	2,231.3	4,339.1	4.12	21.3	1.9	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	189.6	2,140.9	4,026.6	3.98	21.2	1.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	172.0	2,021.4	3,642.4	3.79	21.2	1.8	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	285.0	2,314.9	5,196.4	4.45	18.2	2.2	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	261.6	2,215.1	4,754.2	4.27	18.2	2.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	238.5	2,108.9	4,319.2	4.08	18.1	2.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	209.1	1,977.2	3,842.7	3.86	18.4	1.9	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	189.3	1,869.0	3,466.0	3.68	18.3	1.9	16.02	18.16	8.79	0,831	8.62
70 I-T	49.48	171.5	1,760.6	3,125.6	3.50	18.2	1.8	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	156.6	1,664.5	2,842.7	3.35	18.2	1.7	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	147.9	1,633.3	2,744.8	3.29	18.6	1.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	135.3	1,541.1	2,502.8	3.15	18.5	1.6	11.84	18.12	7.53	0.630	7.06

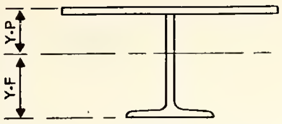


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

91.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,387.7	8,143.8	46,206.4	11.22	33.3	5.7	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,293.5	7,988.1	43,137.4	10.91	33.3	5.4	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,196.2	7,793.1	39,915.0	10.55	33.4	5.1	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,122.8	7,648.6	37,508.2	10.27	33.4	4.9	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,052.4	7,495.9	35,186.9	9.99	33.4	4.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 1-T	147.66	876.6	7,129.4	30,234.7	9.33	34.5	4.2	43.43	36.48	12.12	1.260	28.08
182 1-T	138.34	820.6	6,978.3	28,320.0	9.07	34.5	4.1	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	764.9	6,817.3	26,414.7	8.79	34.5	3.9	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	717.4	6,654.3	24,769.4	8.54	34.5	3.7	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	669.6	6,480.5	23,117.6	8.28	34.5	3.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	1,025.0	6,974.7	31,949.6	9.50	31.2	4.6	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	936.8	6,771.0	29,206.9	9.14	31.2	4.3	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	847.6	6,551.1	26,454.6	8.74	31.2	4.0	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	641.4	6,025.8	20,723.9	7.84	32.3	3.4	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	596.3	5,846.4	19,236.0	7.58	32.3	3.3	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	541.0	5,601.6	17,441.2	7.24	32.2	3.1	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	824.1	6,012.8	23,648.0	8.25	28.7	3.9	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	742.8	5,793.4	21,310.7	7.88	28.7	3.7	39.48	30.12	15.04	1.185	21.38
172 1-T	121.81	670.0	5,572.7	19,217.4	7.52	28.7	3.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	507.2	5,041.0	15,000.6	6.71	29.6	3.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	474.6	4,894.2	14,021.5	6.51	29.5	2.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	441.6	4,726.9	13,025.3	6.29	29.5	2.8	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	407.3	4,533.7	11,984.5	6.04	29.4	2.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	514.5	4,607.2	13,480.8	6.35	26.2	2.9	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	400.6	4,167.6	10,791.7	5.73	26.9	2.6	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	357.2	3,937.7	9,597.7	5.42	26.9	2.4	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	327.4	3,759.6	8,778.0	5.20	26.8	2.3	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	422.5	3,879.5	10,091.8	5.53	23.9	2.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	388.1	3,733.9	9,334.8	5.33	24.1	2.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	355.6	3,577.1	8,541.9	5.11	24.0	2.4	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	322.7	3,401.1	7,736.4	4.88	24.0	2.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	298.9	3,271.8	7,266.1	4.73	24.3	2.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	266.3	3,064.8	6,451.2	4.48	24.2	2.1	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	239.6	2,875.6	5,784.7	4.25	24.1	2.0	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	322.0	3,007.5	6,761.8	4.55	21.0	2.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	269.9	2,729.5	5,744.8	4.21	21.3	2.1	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	229.7	2,478.2	4,858.8	3.89	21.1	2.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	207.9	2,379.3	4,490.5	3.75	21.6	1.9	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	193.6	2,271.1	4,168.1	3.62	21.5	1.8	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	175.8	2,129.9	3,772.3	3.45	21.5	1.8	13.54	20.98	8.24	0.615	8.39



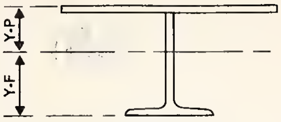
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

102.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,401.9	9,427.2	47,865.2	10.45	34.1	5.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,306.5	9,220.1	44,628.1	10.14	34.2	4.8	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,208.1	8,964.9	41,244.5	9.80	34.1	4.6	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,133.9	8,773.1	38,718.2	9.53	34.1	4.4	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,062.7	8,571.5	36,287.7	9.26	34.1	4.2	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	885.8	8,085.6	31,118.5	8.62	35.1	3.8	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	829.1	7,885.9	29,123.3	8.37	35.1	3.7	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	772.8	7,673.3	27,141.2	8.11	35.1	3.5	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	724.8	7,463.1	25,435.4	7.87	35.1	3.4	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	676.6	7,239.4	23,725.1	7.62	35.1	3.3	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,035.7	7,966.0	32,995.1	8.81	31.9	4.1	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	946.5	7,698.1	30,124.6	8.46	31.8	3.9	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	856.3	7,407.5	27,249.9	8.08	31.8	3.7	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	648.4	6,712.0	21,285.6	7.22	32.8	3.2	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	602.9	6,483.8	19,746.3	6.97	32.8	3.0	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	547.2	6,176.3	17,894.3	6.65	32.7	2.9	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	833.2	6,790.2	24,400.1	7.63	29.3	3.6	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	751.0	6,503.7	21,961.1	7.28	29.2	3.4	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	677.5	6,217.7	19,782.9	6.94	29.2	3.2	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	513.5	5,536.3	15,412.1	6.17	30.0	2.8	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	480.5	5,352.0	14,400.7	5.98	30.0	2.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	447.3	5,145.8	13,374.2	5.78	29.9	2.6	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	412.7	4,911.1	12,303.9	5.55	29.8	2.5	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	638.9	5,569.6	17,079.6	6.44	26.7	3.1	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	575.4	5,306.8	15,356.5	6.13	26.7	2.9	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	521.0	5,058.1	13,877.9	5.85	26.6	2.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	406.2	4,508.3	11,097.6	5.27	27.3	2.5	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	362.4	4,226.9	9,866.8	4.98	27.2	2.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	332.4	4,012.9	9,024.0	4.78	27.2	2.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	533.3	4,733.6	13,046.4	5.66	24.5	2.8	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	480.9	4,482.9	11,718.8	5.38	24.4	2.6	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	428.6	4,206.3	10,400.9	5.09	24.3	2.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	394.0	4,028.1	9,618.9	4.90	24.4	2.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	361.2	3,835.9	8,799.8	4.70	24.4	2.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	328.0	3,623.5	7,969.4	4.49	24.3	2.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	304.1	3,474.6	7,487.9	4.35	24.6	2.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	271.2	3,230.6	6,649.9	4.11	24.5	2.1	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	244.3	3,011.8	5,965.9	3.90	24.4	2.0	16.71	23.90	8.98	0.682	10.52



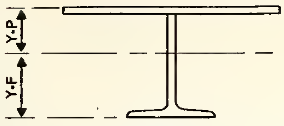
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

112.2# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN. x IN. x LBS./FT.		LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300	I-T	214.24	1,415.3	10,639.3	49,303.1	9.77	34.8	4.6	63.01	36.72	16.65	1.680	34.70
280	I-T	199.68	1,318.8	10,372.1	45,923.9	9.47	34.8	4.4	58.73	36.50	16.59	1.570	32.30
260	I-T	186.30	1,219.6	10,048.6	42,404.8	9.13	34.8	4.2	54.79	36.24	16.55	1.440	30.62
245	I-T	175.31	1,144.6	9,802.9	39,778.1	8.87	34.8	4.1	51.56	36.06	16.51	1.350	28.92
230	I-T	165.10	1,072.8	9,546.4	37,255.8	8.61	34.7	3.9	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194	I-T	147.66	894.8	8,930.3	31,905.7	8.01	35.7	3.6	43.43	36.48	12.12	1.260	28.08
182	I-T	138.34	837.6	8,677.7	29,842.9	7.77	35.6	3.4	40.69	36.32	12.07	1.180	26.33
170	I-T	129.07	780.7	8,409.8	27,796.5	7.52	35.6	3.3	37.96	36.16	12.03	1.100	24.58
160	I-T	122.03	732.4	8,150.1	26,040.0	7.29	35.6	3.2	35.89	36.00	12.00	1.020	23.50
150	I-T	114.89	683.8	7,874.9	24,280.5	7.06	35.5	3.1	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240	I-T	170.91	1,046.2	8,862.4	33,919.3	8.20	32.4	3.8	50.27	33.50	15.86	1.400	27.80
220	I-T	157.07	956.2	8,523.7	30,941.3	7.87	32.4	3.6	46.20	33.24	15.81	1.275	25.76
200	I-T	143.50	865.2	8,156.4	27,963.9	7.51	32.3	3.4	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152	I-T	114.31	655.6	7,281.7	21,803.3	6.69	33.3	3.0	33.62	33.50	11.56	1.055	21.27
141	I-T	106.62	609.7	7,004.2	20,220.9	6.46	33.2	2.9	31.36	33.30	11.53	0.960	24.15
130	I-T	99.11	553.7	6,635.4	18,320.7	6.16	33.1	2.8	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210	I-T	148.40	842.4	7,468.1	25,079.4	7.10	29.8	3.4	43.65	30.38	15.10	1.315	23.54
190	I-T	134.24	759.5	7,110.6	22,554.6	6.76	29.7	3.2	39.48	30.12	15.04	1.185	21.38
172	I-T	121.81	685.4	6,757.0	20,304.7	6.44	29.6	3.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132	I-T	99.55	520.1	5,927.5	15,803.9	5.72	30.4	2.7	29.28	30.30	10.55	1.000	18.63
124	I-T	93.60	486.9	5,707.5	14,765.3	5.54	30.3	2.6	27.53	30.16	10.52	0.930	17.64
116	I-T	88.15	453.5	5,465.1	13,713.0	5.35	30.2	2.5	25.93	30.00	10.50	0.850	16.92
108	I-T	82.89	418.6	5,192.8	12,617.6	5.14	30.1	2.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177	I-T	124.95	647.1	6,036.9	17,562.1	5.98	27.1	2.9	36.75	27.30	14.09	1.190	19.79
160	I-T	112.61	583.0	5,715.7	15,782.4	5.69	27.1	2.8	33.12	27.08	14.02	1.075	17.81
145	I-T	102.05	528.1	5,414.8	14,258.1	5.43	27.0	2.6	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114	I-T	85.05	412.5	4,762.5	11,400.1	4.88	27.6	2.4	25.01	27.28	10.07	0.932	15.54
102	I-T	76.19	368.3	4,435.2	10,137.8	4.61	27.5	2.3	22.41	27.06	10.02	0.827	14.02
94	I-T	70.53	338.1	4,190.5	9,275.0	4.42	27.4	2.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160	I-T	109.94	541.0	5,077.1	13,430.5	5.26	24.8	2.6	32.33	24.72	14.09	1.135	16.21
145	I-T	99.74	488.2	4,778.5	12,062.1	5.00	24.7	2.5	29.34	24.48	14.04	1.020	14.88
130	I-T	89.83	435.5	4,453.7	10,706.4	4.72	24.6	2.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120	I-T	84.70	400.6	4,246.3	9,903.0	4.55	24.7	2.3	24.91	24.30	12.09	0.930	13.51
110	I-T	77.50	367.5	4,023.0	9,061.4	4.36	24.7	2.3	22.80	24.16	12.04	0.855	12.32
100	I-T	70.48	334.0	3,779.3	8,209.4	4.16	24.6	2.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94	I-T	69.66	310.0	3,615.0	7,718.3	4.03	24.9	2.1	20.49	24.28	9.06	0.872	12.53
84	I-T	62.38	276.9	3,341.0	6,860.2	3.81	24.8	2.1	18.35	24.08	9.01	0.772	11.32
76	I-T	56.81	249.8	3,099.2	6,160.9	3.62	24.7	2.0	16.71	23.90	8.98	0.682	10.52



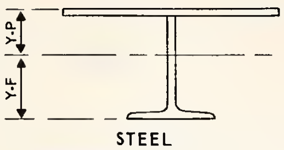
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

122.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,428.4	11,746.9	50,584.8	9.16	35.4	4.3	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,331.0	11,413.2	47,084.1	8.87	35.4	4.1	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,231.0	11,016.1	43,449.5	8.55	35.3	3.9	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,155.4	10,712.5	40,737.2	8.30	35.3	3.8	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,083.1	10,397.9	38,136.8	8.05	35.2	3.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	904.0	9,648.1	32,633.0	7.48	36.1	3.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	846.3	9,341.3	30,512.5	7.25	36.1	3.3	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	789.0	9,017.7	28,411.0	7.01	36.0	3.2	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	740.3	8,709.6	26,611.3	6.80	35.9	3.1	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	691.4	8,384.5	24,809.8	6.58	35.9	3.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,056.8	9,643.8	34,764.5	7.67	32.9	3.6	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	966.1	9,231.5	31,694.5	7.35	32.8	3.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	874.4	8,786.1	28,629.4	7.01	32.7	3.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	663.4	7,734.5	22,300.6	6.24	33.6	2.9	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	617.2	7,410.7	20,681.0	6.02	33.5	2.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	560.8	6,985.8	18,739.5	5.74	33.4	2.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	852.1	8,037.2	25,716.2	6.64	30.2	3.2	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	768.5	7,609.0	23,117.6	6.32	30.1	3.0	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	693.9	7,190.0	20,806.1	6.01	30.0	2.9	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	527.5	6,223.1	16,193.3	5.33	30.7	2.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	494.1	5,971.2	15,130.9	5.16	30.6	2.5	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	460.4	5,697.3	14,056.2	4.98	30.5	2.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	425.3	5,393.2	12,938.9	4.79	30.4	2.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	656.0	6,410.1	18,030.4	5.59	27.5	2.8	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	591.4	6,034.2	16,201.6	5.32	27.4	2.7	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	536.1	5,685.6	14,637.5	5.07	27.3	2.6	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	419.6	4,944.1	11,711.8	4.55	27.9	2.4	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	375.1	4,578.7	10,421.8	4.30	27.8	2.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	344.6	4,309.3	9,541.4	4.12	27.7	2.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	549.6	5,341.7	13,813.8	4.91	25.1	2.6	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	496.4	5,000.6	12,409.8	4.67	25.0	2.5	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	443.3	4,634.2	11,020.9	4.41	24.9	2.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	408.2	4,402.5	10,198.8	4.25	25.0	2.3	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	374.8	4,153.4	9,337.2	4.07	24.9	2.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	341.1	3,884.9	8,466.2	3.89	24.8	2.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	317.0	3,709.3	7,966.6	3.77	25.1	2.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	283.6	3,412.6	7,090.4	3.56	25.0	2.1	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	256.3	3,154.5	6,377.5	3.38	24.9	2.0	16.71	23.90	8.98	0.682	10.52

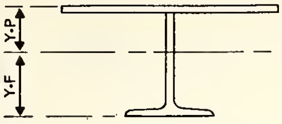


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

132.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,441.6	12,734.4	51,762.6	8.62	35.9	4.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,343.5	12,330.7	48,156.5	8.34	35.8	3.9	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,242.8	11,857.9	44,421.8	8.03	35.7	3.7	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,166.6	11,495.0	41,635.1	7.79	35.7	3.6	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,093.8	11,121.8	38,966.9	7.56	35.6	3.5	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	913.8	10,240.7	33,329.8	7.02	36.5	3.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	855.6	9,881.4	31,158.9	6.80	36.4	3.2	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	797.9	9,504.5	29,009.4	6.57	36.4	3.1	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	748.9	9,151.1	27,171.8	6.37	36.3	3.0	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	699.7	8,780.1	25,333.5	6.16	36.2	2.9	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,068.0	10,307.3	35,564.5	7.21	33.3	3.5	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	976.6	9,822.2	32,414.4	6.90	33.2	3.3	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	884.3	9,300.9	29,272.7	6.58	33.1	3.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	671.9	8,083.4	22,796.7	5.84	33.9	2.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	625.4	7,718.0	21,144.2	5.64	33.8	2.7	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	568.7	7,244.3	19,166.3	5.38	33.7	2.6	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	862.5	8,502.5	26,335.2	6.23	30.5	3.1	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	778.3	8,007.5	23,671.9	5.93	30.4	3.0	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	703.2	7,528.1	21,306.1	5.64	30.3	2.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	535.8	6,440.0	16,594.3	5.00	31.0	2.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	502.1	6,161.1	15,510.8	4.84	30.9	2.5	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	468.2	5,861.2	14,416.2	4.67	30.8	2.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	433.0	5,531.6	13,279.3	4.49	30.7	2.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	665.8	6,701.1	18,501.7	5.25	27.8	2.8	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	600.8	6,276.5	16,629.5	4.99	27.7	2.6	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	545.0	5,886.5	15,030.0	4.76	27.6	2.6	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	427.8	5,071.4	12,043.8	4.28	28.2	2.4	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	383.0	4,676.0	10,728.8	4.04	28.0	2.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	352.3	4,388.1	9,832.5	3.88	27.9	2.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	559.3	5,541.8	14,210.0	4.62	25.4	2.6	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	505.8	5,164.8	12,774.3	4.39	25.3	2.5	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	452.3	4,764.4	11,355.7	4.15	25.1	2.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	417.0	4,513.5	10,516.7	4.00	25.2	2.3	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	383.3	4,244.4	9,637.0	3.83	25.1	2.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	349.4	3,957.1	8,748.7	3.66	25.0	2.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	325.2	3,773.9	8,241.4	3.55	25.3	2.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	291.5	3,461.3	7,348.8	3.36	25.2	2.1	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	264.1	3,192.3	6,623.2	3.19	25.1	2.1	16.71	23.90	8.98	0.682	10.52



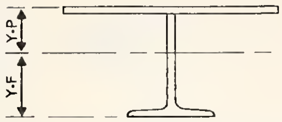
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

60t

142.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,455.4	13,591.3	52,873.4	8.14	36.3	3.9	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,356.5	13,117.0	49,174.5	7.87	36.3	3.7	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,255.2	12,569.6	45,351.8	7.58	36.1	3.6	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,178.5	12,148.8	42,499.7	7.35	36.1	3.5	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,105.2	11,719.1	39,771.7	7.12	36.0	3.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	924.2	10,714.9	34,017.2	6.61	36.8	3.2	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	865.7	10,306.9	31,801.7	6.40	36.7	3.1	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	807.6	9,881.5	29,609.4	6.19	36.7	3.0	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	758.4	9,487.7	27,738.2	6.00	36.6	2.9	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	708.9	9,076.4	25,867.1	5.80	36.5	2.8	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,080.0	10,854.7	36,343.6	6.80	33.7	3.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	988.0	10,300.9	33,122.6	6.51	33.5	3.2	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	895.1	9,709.3	29,913.0	6.20	33.4	3.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	681.3	8,343.6	23.305.8	5.51	34.2	2.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	634.6	7,942.7	21,624.0	5.31	34.1	2.7	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	577.5	7,428.5	19,613.3	5.07	34.0	2.6	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	874.0	8,872.4	26,954.5	5.88	30.8	3.0	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	789.2	8,317.2	24,233.4	5.59	30.7	2.9	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	713.6	7,784.8	21,819.1	5.32	30.6	2.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	545.1	6,595.0	17,018.4	4.72	31.2	2.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	511.2	6,294.4	15,915.8	4.57	31.1	2.5	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	477.2	5,974.2	14,803.1	4.41	31.0	2.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	441.8	5,625.3	13,648.4	4.24	30.9	2.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	676.8	6,922.9	18,989.6	4.96	28.1	2.7	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	611.4	6,457.0	17,078.1	4.72	27.9	2.6	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	555.2	6,032.9	15,446.6	4.49	27.8	2.6	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	437.2	5,160.0	12,405.4	4.04	28.4	2.4	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	392.1	4,742.4	11,067.5	3.82	28.2	2.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	361.3	4,441.5	10,156.4	3.67	28.1	2.3	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	570.4	5,691.4	14,630.2	4.37	25.6	2.6	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	516.5	5,285.6	13,165.6	4.15	25.5	2.5	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	462.7	4,859.0	11,719.8	3.92	25.3	2.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	427.2	4,593.7	10,865.4	3.78	25.4	2.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	393.3	4,309.9	9,969.1	3.63	25.3	2.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	359.2	4,009.4	9,064.8	3.46	25.2	2.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	334.8	3,821.7	8,550.5	3.36	25.5	2.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	300.9	3,498.9	7,642.5	3.19	25.4	2.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	273.4	3,223.8	6,905.1	3.03	25.3	2.1	16.71	23.90	8.98	0.682	10.52



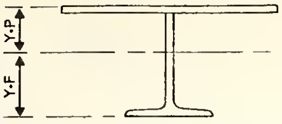
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 11 3/4 x 105 I-T	71.22	68.1	159.4	879.9	6.36	5.5	12.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	62.7	146.1	802.2	6.35	5.5	12.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	63.6	127.0	781.8	6.50	6.2	12.3	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	57.9	115.8	705.9	6.48	6.1	12.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	53.2	105.3	640.6	6.46	6.1	12.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	49.3	96.8	587.4	6.46	6.1	11.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	50.5	90.4	594.6	6.60	6.6	11.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	47.0	82.7	546.6	6.58	6.6	11.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	43.5	75.4	499.8	6.58	6.6	11.5	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	51.9	104.3	569.8	5.80	5.5	11.0	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	47.6	95.1	516.6	5.78	5.4	10.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	43.5	86.0	465.6	5.76	5.4	10.7	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	40.1	78.2	423.5	5.76	5.4	10.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	38.8	68.5	405.4	5.95	5.9	10.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	35.6	61.9	367.4	5.95	5.9	10.3	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	32.5	55.6	331.0	5.97	5.9	10.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	30.6	49.3	301.4	5.93	6.1	9.8	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	32.1	65.4	303.0	5.13	4.6	9.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	29.8	59.7	276.8	5.14	4.6	9.3	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	27.5	53.7	251.0	5.14	4.7	9.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	27.1	47.3	245.7	5.30	5.2	9.1	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	25.2	42.4	223.2	5.31	5.3	8.9	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	23.4	37.1	200.6	5.29	5.4	8.6	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	37.2	94.8	367.7	4.58	3.9	9.9	16.77	13.64	10.07	0.932	7.77
51 T	51.03	37.5	94.0	366.1	4.82	3.9	9.8	15.01	13.53	10.02	0.827	7.01
47 T	47.02	32.6	79.5	313.9	4.63	3.9	9.6	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	30.5	93.3	282.5	3.92	3.0	9.3	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	28.3	71.4	248.7	4.13	3.5	8.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	26.2	64.7	227.1	4.16	3.5	8.7	12.35	12.04	9.01	0.772	5.65
38 T	38.01	24.8	58.6	210.3	4.19	3.6	8.5	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	26.1	54.7	217.3	4.50	4.0	8.3	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	24.0	49.5	197.1	4.50	4.0	8.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	22.0	44.8	177.8	4.52	4.0	8.1	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	21.8	39.9	174.4	4.64	4.4	8.0	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	19.7	34.9	153.4	4.65	4.4	7.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	18.1	30.6	137.3	4.67	4.5	7.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	18.4	23.8	128.8	4.74	5.4	7.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	16.8	20.5	113.5	4.71	5.5	6.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	15.6	17.2	99.2	4.62	5.8	6.4	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	14.3	14.9	87.8	4.64	5.9	6.1	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	12.4	12.8	76.5	4.66	6.2	6.0	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	20.8	50.1	157.7	3.70	3.1	7.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	19.9	47.2	149.6	3.72	3.2	7.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	18.8	43.3	139.3	3.75	3.2	7.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	15.5	30.7	101.5	3.75	3.3	6.6	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	15.8	27.5	103.9	3.95	3.8	6.6	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	14.4	23.9	91.5	3.96	3.8	6.4	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	13.1	19.8	79.2	3.93	4.0	6.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	13.8	17.9	80.7	4.03	4.5	5.8	4.18	10.24	4.02	0.394	2.56

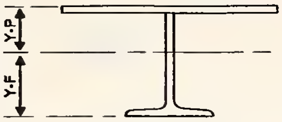


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

3.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 4 x17 I-T	12.81	12.9	15.6	72.4	3.99	4.6	5.6	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	12.1	13.6	64.8	3.94	4.8	5.3	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	10.7	10.7	53.5	3.96	5.0	5.0	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	8.4	10.2	46.8	3.98	5.6	4.6	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	18.9	61.8	134.6	2.88	2.2	7.1	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	16.7	46.0	112.6	3.05	2.5	6.8	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	15.4	36.5	100.0	3.23	2.7	6.5	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	14.7	33.9	94.1	3.26	2.8	6.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	13.9	31.3	87.7	3.28	2.8	6.3	7.35	9.00	7.50	0.570	3.22
8 x 7 x 25 T	24.99	12.2	28.1	70.2	2.94	2.5	5.8	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	11.5	25.7	65.1	2.97	2.5	5.7	6.62	8.06	7.04	0.563	2.78
20 T	19.99	10.8	23.5	60.0	3.00	2.6	5.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	10.4	21.0	56.0	3.01	2.7	5.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	11.4	21.7	61.2	3.14	2.8	5.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	10.4	19.0	54.1	3.16	2.9	5.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	10.3	15.8	51.4	3.27	3.2	5.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	9.5	13.4	45.1	3.25	3.4	4.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	9.6	11.5	43.1	3.26	3.7	4.5	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	8.9	9.9	38.0	3.22	3.9	4.3	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.0	8.0	32.1	3.29	4.0	4.0	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.2	7.1	24.4	3.25	4.7	3.4	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	8.9	19.7	44.2	2.64	2.2	4.9	5.59	7.06	6.78	0.513	2.20
17 T	17.00	8.6	18.1	41.6	2.68	2.3	4.8	5.00	7.00	6.75	0.453	2.00
15 T	14.99	8.2	16.0	38.3	2.72	2.4	4.7	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	6.8	8.1	26.4	2.83	3.3	3.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	3.9	5.8	16.7	2.86	4.3	2.9	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	7.3	16.8	31.8	2.29	1.9	4.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	6.8	14.9	28.9	2.33	1.9	4.2	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	6.5	13.3	26.6	2.37	2.0	4.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	7.1	9.8	26.3	2.55	2.7	3.7	3.26	6.24	4.03	0.404	1.62
11 T	11.02	6.6	9.9	25.0	2.49	2.5	3.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	6.3	8.5	22.4	2.50	2.6	3.6	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	6.2	7.2	20.4	2.50	2.8	3.3	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	6.0	7.1	20.0	2.49	2.8	3.3	2.43	6.00	4.00	0.269	1.38
7 T	7.04	5.7	6.1	18.0	2.51	2.9	3.2	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.3	5.4	15.9	2.50	3.0	2.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.0	5.4	16.0	2.53	3.2	2.9	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	2.8	4.7	10.7	2.46	3.8	2.3	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	5.5	11.6	19.6	1.97	1.7	3.5	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	5.2	10.3	17.8	2.00	1.7	3.4	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	5.0	8.7	16.0	2.03	1.9	3.2	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	5.1	7.5	16.0	2.12	2.1	3.1	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	5.0	6.6	14.7	2.12	2.2	3.0	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	4.8	5.7	13.3	2.11	2.3	2.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.4	4.5	11.3	2.14	2.5	2.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.4	4.2	9.6	2.14	2.8	2.3	1.32	5.00	2.68	0.204	0.77



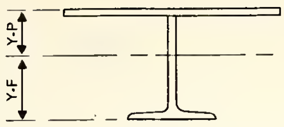
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 4 x 7.5 T	7.55	3.8	4.9	8.9	1.72	1.8	2.4	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	3.6	4.2	8.0	1.72	1.9	2.2	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.4	3.4	6.9	1.75	2.0	2.1	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.1	3.1	5.2	1.72	2.5	1.7	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.6	2.6	3.6	1.51	2.3	1.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 6 T	6.02	2.6	3.1	4.4	1.31	1.4	1.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.3	2.3	3.5	1.32	1.5	1.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.1	2.2	2.3	1.28	2.1	1.1	0.65	3.00	1.84	0.167	0.34



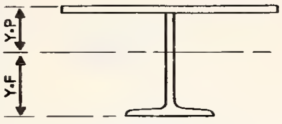
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 11 3/4 x 105 I-T	71.22	74.9	164.7	950.9	6.55	5.8	12.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	69.5	151.2	871.7	6.54	5.8	12.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	70.3	131.4	845.8	6.68	6.4	12.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	64.5	120.1	768.7	6.68	6.4	11.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	59.8	109.4	701.7	6.67	6.4	11.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	55.8	100.7	647.2	6.68	6.4	11.6	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	57.0	94.0	653.0	6.81	6.9	11.5	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	53.5	86.2	603.3	6.80	7.0	11.3	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	50.0	78.8	555.0	6.81	7.0	11.1	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	57.8	108.2	620.8	5.98	5.7	10.7	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	53.5	98.8	566.3	5.96	5.7	10.6	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	49.3	89.6	513.9	5.96	5.7	10.4	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	45.9	81.6	470.4	5.97	5.8	10.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	44.7	71.6	451.0	6.16	6.3	10.1	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	41.5	64.8	411.6	6.17	6.4	9.9	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	38.3	58.4	373.8	6.20	6.4	9.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	36.3	51.8	341.4	6.16	6.6	9.4	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	37.3	68.4	340.2	5.34	5.0	9.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	34.9	62.4	312.7	5.35	5.0	8.9	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	32.6	56.3	285.5	5.37	5.1	8.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	32.3	49.7	279.5	5.52	5.6	8.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	30.3	44.7	255.4	5.53	5.7	8.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	28.4	39.1	230.7	5.51	5.9	8.1	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	42.3	99.4	409.0	4.77	4.1	9.7	16.77	13.64	10.07	0.932	7.77
51 T	51.03	42.6	97.8	406.3	5.00	4.2	9.5	15.01	13.53	10.02	0.827	7.01
47 T	47.02	37.6	83.5	352.8	4.84	4.2	9.4	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	35.1	98.4	318.8	4.11	3.2	9.1	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	32.8	75.2	281.2	4.33	3.7	8.6	13.81	12.15	9.06	0.872	6.26
42 T	41.99	30.7	68.2	258.5	4.37	3.8	8.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	29.2	61.9	240.4	4.40	3.9	8.2	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	30.6	57.3	246.2	4.70	4.3	8.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	28.5	52.0	225.0	4.71	4.3	7.9	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	26.5	47.0	204.8	4.74	4.4	7.7	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	26.3	42.0	200.7	4.84	4.8	7.6	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	24.1	36.7	178.2	4.87	4.9	7.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	22.5	32.3	160.6	4.88	5.0	7.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	22.7	25.2	148.5	4.91	5.9	6.6	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	21.1	21.7	131.6	4.87	6.1	6.2	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	18.3	19.7	115.2	4.77	6.3	5.9	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	15.8	18.4	102.5	4.76	6.5	5.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	13.2	16.9	90.1	4.77	6.8	5.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	24.7	53.1	181.8	3.90	3.4	7.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	23.8	50.0	173.2	3.93	3.5	7.3	10.01	10.57	8.27	0.685	4.54
31 T	31.01	22.8	45.9	161.9	3.96	3.5	7.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	19.1	32.4	119.1	3.94	3.7	6.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	19.6	29.0	121.3	4.14	4.2	6.2	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	18.1	25.3	107.9	4.15	4.3	6.0	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	16.8	21.0	93.7	4.10	4.5	5.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	17.4	18.9	94.3	4.18	5.0	5.4	4.18	10.24	4.02	0.394	2.56

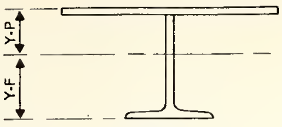


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^3	IN.^3	IN.^4	IN.	IN.	IN.	IN.^2	IN.	IN.	IN.	IN.^2
10 x 4 x 17 I-T	12.81	16.5	16.6	84.8	4.13	5.1	5.2	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	14.4	15.6	76.0	4.06	5.3	4.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	11.4	14.1	63.1	4.05	5.6	4.5	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	8.9	13.6	54.6	4.02	6.1	4.0	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	22.4	66.0	155.9	3.06	2.4	7.0	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	20.1	49.0	131.7	3.24	2.7	6.6	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	18.8	38.9	117.5	3.42	3.0	6.3	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	18.1	36.2	111.0	3.45	3.1	6.1	8.09	9.06	7.53	0.630	3.53
25 T	24.99	17.3	33.3	104.1	3.49	3.1	6.0	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	17.9	43.4	105.4	2.88	2.4	5.9	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	17.0	40.4	98.4	2.91	2.4	5.8	10.43	8.08	8.54	0.795	3.92
32 T	31.96	16.1	37.3	91.7	2.94	2.5	5.7	9.40	8.00	8.50	0.715	3.54
29 T	28.97	15.3	34.5	85.9	2.97	2.5	5.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	15.2	30.1	83.8	3.13	2.8	5.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	14.5	27.5	78.1	3.16	2.8	5.4	6.62	8.06	7.04	0.563	2.78
20 T	19.99	13.8	25.1	72.6	3.20	2.9	5.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	13.4	22.4	67.7	3.20	3.0	5.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	14.4	23.0	72.8	3.31	3.2	5.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	13.4	20.1	64.9	3.33	3.2	4.8	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	13.3	16.8	61.4	3.42	3.7	4.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	12.4	14.2	53.9	3.39	3.8	4.3	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	12.2	12.4	51.1	3.37	4.2	4.1	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	10.5	11.7	45.0	3.32	4.3	3.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.4	10.8	38.1	3.35	4.5	3.5	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.5	9.8	28.6	3.23	5.2	2.9	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	11.6	21.2	54.1	2.82	2.6	4.7	5.59	7.06	6.78	0.513	2.20
17 T	17.00	11.3	19.4	51.0	2.86	2.6	4.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	10.9	17.0	47.0	2.89	2.8	4.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	8.7	9.3	32.1	2.93	3.7	3.5	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.1	8.2	19.6	2.81	4.8	2.4	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	9.6	18.1	39.4	2.46	2.2	4.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	9.1	16.0	36.0	2.50	2.3	3.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	8.8	14.2	33.3	2.53	2.3	3.8	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	9.4	10.4	31.6	2.66	3.0	3.4	3.26	6.24	4.03	0.404	1.62
11 T	11.02	8.9	10.6	30.5	2.62	2.9	3.4	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	8.5	9.0	27.3	2.60	3.0	3.2	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	7.7	8.3	24.6	2.57	3.2	2.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	7.5	8.2	24.1	2.57	3.2	3.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.5	7.8	21.7	2.57	3.3	2.8	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.5	7.5	19.1	2.53	3.4	2.5	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.3	7.5	19.1	2.55	3.6	2.5	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	7.4	12.5	24.6	2.12	2.0	3.3	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	7.1	11.0	22.5	2.14	2.0	3.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	6.8	9.2	20.1	2.16	2.2	2.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	7.0	8.0	19.8	2.22	2.5	2.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	6.8	7.0	18.0	2.20	2.6	2.6	2.49	5.06	4.01	0.329	1.21



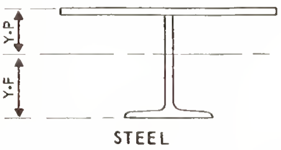
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 4 x 7.5 T	7.48	6.0	6.6	16.2	2.18	2.7	2.5	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.7	6.2	13.7	2.17	2.9	2.2	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.5	5.9	11.4	2.12	3.2	1.9	1.32	5.00	2.68	0.204	0.77
4 x 4 x 7.5 T	7.55	5.2	5.2	11.0	1.79	2.1	2.1	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.4	5.0	9.8	1.77	2.2	1.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.6	4.8	8.4	1.77	2.3	1.8	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.2	4.5	6.1	1.67	2.8	1.4	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	3.8	4.2	1.45	2.5	1.1	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	3.9	4.5	6.8	1.38	1.5	1.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.3	3.6	5.5	1.35	1.7	1.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.4	3.4	4.3	1.33	1.8	1.3	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	3.2	2.7	1.20	2.3	0.9	0.65	3.00	1.84	0.167	0.34

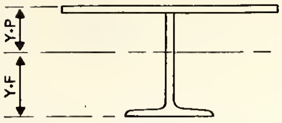


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

7.65 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
21 x 9 x 96 I-T	70.15	102.6	171.1	1,367.7	7.81	8.0	13.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	90.8	147.3	1,182.5	7.81	8.0	13.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	87.2	134.1	1,131.9	8.01	8.4	13.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	83.1	125.4	1,065.4	8.01	8.5	12.8	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	78.2	114.4	983.1	8.01	8.6	12.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	79.6	170.3	982.5	6.42	5.8	12.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	89.1	184.4	1,121.3	6.76	6.1	12.6	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	83.5	170.6	1,037.2	6.76	6.1	12.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	78.0	156.8	955.7	6.76	6.1	12.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	78.7	136.2	923.0	6.88	6.8	11.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	72.9	124.7	844.1	6.89	6.8	11.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	68.1	113.8	774.7	6.89	6.8	11.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	64.1	104.9	718.0	6.91	6.8	11.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	65.3	97.9	722.1	7.02	7.4	11.1	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	61.7	89.9	670.1	7.02	7.5	10.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	58.2	82.3	619.6	7.03	7.5	10.7	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	65.3	112.4	681.9	6.17	6.1	10.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	60.9	102.9	625.6	6.16	6.1	10.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	56.7	93.4	571.1	6.17	6.1	10.1	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	53.2	85.2	525.6	6.18	6.2	9.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	52.1	74.8	504.3	6.37	6.7	9.7	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	48.8	67.8	462.9	6.38	6.8	9.5	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	45.7	61.1	423.1	6.42	6.9	9.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	43.5	54.2	386.9	6.37	7.1	8.9	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	50.7	98.8	481.6	5.44	4.9	9.5	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	47.9	89.5	447.6	5.45	5.0	9.3	13.31	14.16	10.04	0.718	5.87
14 x 8 x 53 I-T	36.44	43.8	71.3	383.6	5.54	5.4	8.8	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	41.4	65.2	354.3	5.56	5.4	8.6	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	39.0	58.8	325.3	5.57	5.5	8.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	38.8	52.1	318.2	5.72	6.1	8.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	36.7	46.8	292.0	5.72	6.2	8.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	34.7	41.0	264.3	5.70	6.4	7.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	38.5	79.2	319.9	4.53	4.0	8.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	36.4	71.8	295.6	4.58	4.1	8.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	34.9	65.2	275.8	4.62	4.2	7.9	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	36.4	59.9	279.8	4.89	4.7	7.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	34.2	54.3	257.2	4.90	4.7	7.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	32.1	49.1	235.7	4.94	4.8	7.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	32.0	44.0	230.5	5.03	5.2	7.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	29.8	38.5	206.0	5.05	5.4	6.9	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	28.1	33.8	186.2	5.05	5.5	6.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	26.4	28.1	170.0	5.04	6.4	6.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	22.8	26.4	151.0	4.97	6.6	5.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	19.2	24.8	132.1	4.85	6.9	5.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	16.6	23.5	117.5	4.82	7.1	5.0	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	13.9	22.0	103.8	4.80	7.5	4.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	29.7	56.1	210.0	4.10	3.7	7.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	28.8	52.8	200.6	4.13	3.8	7.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	27.7	48.4	188.2	4.16	3.9	6.8	9.12	10.49	8.24	0.615	4.19

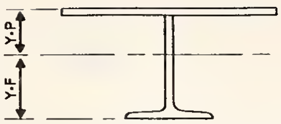


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
10 x 8 x 45 1-T	29.46	27.4	46.0	176.9	4.12	3.8	6.5	8.66	10.12	8.02	0.618	3.54
33 1-T	21.93	23.8	33.9	138.8	4.11	4.1	5.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	24.3	30.4	140.7	4.29	4.6	5.8	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	22.8	26.5	125.8	4.29	4.7	5.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	21.3	22.0	109.2	4.23	5.0	5.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	19.8	22.0	108.8	4.28	5.5	4.9	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	17.4	20.9	97.9	4.21	5.6	4.7	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	15.1	19.9	87.6	4.12	5.8	4.4	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	11.9	18.4	72.5	4.06	6.1	3.9	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	9.3	17.8	62.1	3.97	6.7	3.5	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	24.4	52.1	154.1	3.43	3.0	6.3	11.32	9.08	8.79	0.831	4.31
35 T	34.95	23.4	48.2	144.8	3.47	3.0	6.2	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	23.1	41.2	137.8	3.61	3.3	6.0	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	22.4	38.2	130.5	3.64	3.4	5.8	8.09	9.06	7.53	0.630	3.53
25 T	24.99	21.5	35.2	122.7	3.67	3.5	5.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	21.8	46.3	123.5	3.06	2.7	5.7	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	20.8	43.0	115.9	3.08	2.7	5.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	19.9	39.7	108.5	3.12	2.7	5.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	19.1	36.6	102.1	3.15	2.8	5.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	19.1	31.9	99.3	3.30	3.1	5.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	18.4	29.1	92.8	3.33	3.2	5.1	6.62	8.06	7.04	0.563	2.78
20 T	19.99	17.6	26.5	86.6	3.37	3.3	4.9	5.88	8.00	7.00	0.503	2.45
18 T	18.36	17.1	23.6	80.6	3.35	3.4	4.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	18.2	24.1	85.6	3.45	3.6	4.7	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	17.2	21.0	76.5	3.46	3.7	4.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	17.0	17.6	72.0	3.52	4.1	4.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	14.8	16.1	63.1	3.47	4.3	3.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	12.8	16.0	59.2	3.43	4.6	3.7	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	10.9	15.2	52.1	3.35	4.8	3.4	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.8	14.3	43.9	3.33	5.0	3.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.51-T	5.19	5.7	13.2	32.5	3.14	5.7	2.5	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	15.0	22.4	65.0	2.97	2.9	4.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	14.6	20.4	61.2	3.01	3.0	4.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	14.1	17.9	56.2	3.02	3.1	4.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.1	12.4	37.8	2.97	4.1	3.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.2	11.1	22.1	2.70	5.2	2.0	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	12.5	19.1	47.8	2.60	2.5	3.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	12.0	16.9	43.7	2.63	2.6	3.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	11.6	14.9	40.3	2.65	2.7	3.5	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	10.9	12.2	37.1	2.72	3.4	3.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.1	11.7	36.1	2.69	3.3	3.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.4	11.3	32.2	2.65	3.4	2.9	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	8.0	11.0	28.6	2.59	3.6	2.6	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	7.9	10.8	28.2	2.59	3.6	2.6	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.8	10.5	25.3	2.57	3.7	2.4	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	5.7	10.1	22.0	2.49	3.8	2.2	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.5	10.2	22.1	2.52	4.0	2.2	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.0	9.2	14.0	2.26	4.7	1.5	0.99	6.00	1.84	0.188	0.68



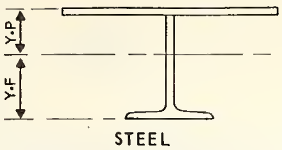
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

50t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	9.9	13.2	29.9	2.23	2.3	3.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	9.5	11.6	27.3	2.24	2.4	2.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	9.2	9.6	24.2	2.23	2.5	2.6	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.4	9.4	23.5	2.27	2.8	2.5	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.3	9.1	21.3	2.24	2.9	2.3	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.3	8.8	19.0	2.19	3.0	2.2	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.9	8.4	15.9	2.14	3.2	1.9	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.7	8.1	13.1	2.06	3.6	1.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	7.3	7.7	15.9	1.84	2.1	2.2	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.5	7.1	14.2	1.82	2.2	2.0	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.5	7.1	13.1	1.81	2.4	1.9	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.6	6.8	11.5	1.77	2.5	1.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.7	6.5	9.8	1.74	2.6	1.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.2	6.1	6.9	1.59	3.1	1.1	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	5.2	4.8	1.36	2.8	0.9	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.7	5.3	8.3	1.41	1.8	1.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.5	5.0	6.5	1.36	1.9	1.3	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.5	4.7	5.0	1.29	2.0	1.1	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	4.3	3.0	1.11	2.5	0.7	0.65	3.00	1.84	0.167	0.34

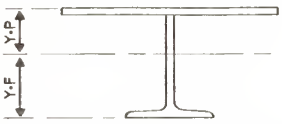


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
21 x 9 x 96 I-T	70.15	113.5	176.6	1,476.0	8.01	8.4	13.0	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	101.7	152.4	1,285.4	8.02	8.4	12.6	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	98.2	138.8	1,234.0	8.22	8.9	12.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	94.1	130.0	1,164.5	8.22	9.0	12.4	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	89.0	118.7	1,078.3	8.23	9.1	12.1	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	89.2	176.7	1,075.4	6.63	6.1	12.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	99.0	190.4	1,218.0	6.96	6.4	12.3	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	93.3	176.4	1,131.3	6.96	6.4	12.1	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	87.8	162.3	1,047.0	6.97	6.5	11.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	88.3	140.9	1,006.5	7.07	7.1	11.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	82.5	129.1	925.1	7.09	7.2	11.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	77.6	117.9	852.7	7.09	7.2	11.0	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	73.6	108.8	793.4	7.11	7.3	10.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	74.8	101.6	795.4	7.22	7.8	10.6	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	71.2	93.4	740.6	7.21	7.9	10.4	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	67.5	85.5	687.3	7.23	8.0	10.2	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 1-T	54.99	73.9	116.5	747.8	6.35	6.4	10.1	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	69.5	106.7	689.1	6.35	6.5	9.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	65.2	96.9	632.0	6.36	6.5	9.7	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	61.6	88.5	584.0	6.37	6.6	9.5	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	60.6	77.7	560.2	6.55	7.2	9.2	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	57.3	70.4	516.1	6.56	7.3	9.0	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	54.1	63.5	473.6	6.59	7.5	8.8	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	51.7	56.4	433.3	6.53	7.7	8.4	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 1-T	36.44	51.3	74.1	429.2	5.72	5.8	8.4	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	48.9	67.6	397.7	5.73	5.9	8.1	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	46.4	61.0	366.3	5.74	6.0	7.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	46.2	54.1	357.6	5.88	6.6	7.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	44.1	48.6	328.8	5.87	6.8	7.5	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	42.0	42.6	297.8	5.83	7.0	7.1	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	45.1	82.9	361.3	4.72	4.4	8.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	43.0	75.1	334.9	4.77	4.5	7.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	41.3	68.1	313.0	4.80	4.6	7.6	11.18	11.95	8.98	0.682	5.26
12 x 10 x 58 1-T	37.58	43.6	73.4	339.0	5.02	4.6	7.8	11.05	12.18	10.01	0.641	4.37
53 1-T	34.55	41.8	67.0	315.9	5.02	4.7	7.6	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	42.9	62.2	314.9	5.05	5.1	7.3	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	40.7	56.4	290.5	5.06	5.1	7.1	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	38.6	51.0	267.2	5.09	5.2	6.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	38.6	45.8	260.7	5.18	5.7	6.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	36.2	39.9	233.6	5.18	5.9	6.4	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	34.5	35.0	211.4	5.16	6.0	6.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	27.4	34.3	190.9	5.10	7.0	5.6	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	23.7	32.5	169.4	5.01	7.2	5.2	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	20.0	30.7	147.9	4.86	7.4	4.8	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	17.2	29.3	131.3	4.80	7.6	4.5	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	14.4	27.7	115.9	4.75	8.0	4.2	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	35.5	58.7	239.6	4.27	4.1	6.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	34.5	55.2	229.3	4.30	4.2	6.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	33.4	50.6	215.4	4.33	4.3	6.5	9.12	10.49	8.24	0.615	4.19



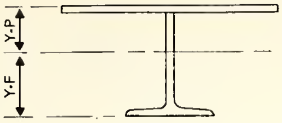
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 8 x 33 1-T	21.93	29.0	35.2	158.5	4.23	4.5	5.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	29.8	31.6	160.0	4.40	5.1	5.4	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	27.5	28.1	143.1	4.38	5.2	5.1	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	22.8	26.5	124.0	4.29	5.4	4.7	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	20.6	27.2	122.5	4.32	6.0	4.5	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	18.0	26.0	110.0	4.23	6.1	4.2	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	15.7	24.9	98.2	4.12	6.3	3.9	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	12.3	23.3	80.9	4.01	6.6	3.5	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	9.6	22.5	68.6	3.88	7.2	3.0	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	29.4	54.7	177.8	3.60	3.2	6.1	11.32	9.08	8.79	0.831	4.31
35 T	34.95	28.3	50.6	167.4	3.63	3.3	5.9	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	28.0	43.1	158.7	3.76	3.7	5.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	27.3	40.0	150.4	3.79	3.8	5.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	26.4	36.8	141.7	3.81	3.9	5.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	26.2	48.7	142.7	3.21	2.9	5.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	25.2	45.2	134.3	3.24	3.0	5.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	24.3	41.6	126.0	3.27	3.0	5.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	23.5	38.4	118.7	3.30	3.1	5.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	23.5	33.3	115.0	3.44	3.5	4.9	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	22.7	30.4	107.6	3.45	3.5	4.7	6.62	8.06	7.04	0.563	2.78
20 T	19.99	22.0	27.6	100.5	3.49	3.6	4.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	21.4	24.6	93.2	3.46	3.8	4.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	22.6	25.0	98.2	3.55	3.9	4.3	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	21.4	21.7	87.8	3.53	4.0	4.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	18.2	21.3	82.0	3.57	4.5	3.8	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.3	20.2	71.6	3.49	4.7	3.5	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.3	20.1	66.7	3.43	5.0	3.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.3	19.2	58.5	3.33	5.2	3.1	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	9.0	18.2	48.9	3.27	5.4	2.7	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	5.8	16.9	35.6	3.01	6.1	2.1	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	18.8	23.4	75.8	3.08	3.2	4.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	18.4	21.2	71.2	3.10	3.4	3.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	17.9	18.6	65.1	3.09	3.5	3.6	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.4	15.9	42.8	2.95	4.5	2.7	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.3	14.3	24.0	2.57	5.5	1.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	15.9	19.9	56.0	2.70	2.8	3.5	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	15.3	17.5	51.2	2.71	2.9	3.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	14.9	15.4	47.0	2.72	3.0	3.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	11.3	15.4	42.1	2.73	3.7	2.7	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.5	14.9	41.4	2.71	3.6	2.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.8	14.4	36.6	2.65	3.7	2.5	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	8.2	14.0	32.3	2.57	3.9	2.3	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.1	13.8	31.8	2.57	3.9	2.3	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.0	13.4	28.3	2.52	4.1	2.1	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	5.9	13.0	24.4	2.42	4.2	1.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.6	13.1	24.5	2.44	4.3	1.9	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.1	11.8	15.2	2.12	4.9	1.3	0.99	6.00	1.84	0.188	0.68



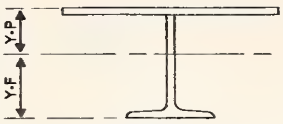
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	12.6	13.8	35.1	2.29	2.5	2.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.0	12.2	31.8	2.29	2.7	2.6	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.0	11.8	27.9	2.25	2.8	2.4	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.7	12.0	26.9	2.28	3.1	2.2	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.5	11.7	24.2	2.22	3.2	2.1	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.5	11.3	21.5	2.16	3.3	1.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.0	10.8	17.7	2.08	3.5	1.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.7	10.4	14.4	1.97	3.8	1.4	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	7.9	9.4	18.5	1.86	2.3	2.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.7	9.2	16.3	1.82	2.4	1.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.6	9.1	14.9	1.80	2.6	1.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.7	8.8	13.0	1.74	2.7	1.5	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	8.5	10.9	1.68	2.9	1.3	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	7.9	7.5	1.49	3.3	0.9	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	6.7	5.1	1.27	3.0	0.8	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.8	6.9	9.5	1.41	2.0	1.4	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.6	6.4	7.4	1.33	2.1	1.1	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.5	6.0	5.6	1.24	2.2	0.9	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	5.4	3.2	1.03	2.6	0.6	0.65	3.00	1.84	0.167	0.34



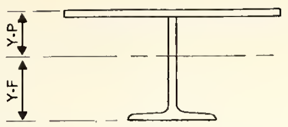
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	159.2	265.9	2,444.2	9.34	9.2	15.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	150.0	245.8	2,274.4	9.37	9.3	15.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	141.4	225.2	2,106.6	9.40	9.4	14.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	146.0	204.3	2,088.2	9.40	10.2	14.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	136.1	183.6	1,901.7	9.41	10.4	14.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	128.5	166.0	1,749.4	9.39	10.5	13.6	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	126.2	182.2	1,594.9	8.19	8.8	12.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	114.2	157.4	1,397.2	8.21	8.9	12.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	110.9	143.4	1,344.1	8.41	9.4	12.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	106.7	134.3	1,271.1	8.42	9.5	11.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	101.6	122.7	1,180.0	8.41	9.6	11.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	100.3	183.1	1,177.7	6.84	6.4	11.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	110.5	196.5	1,324.7	7.15	6.7	12.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	104.7	182.1	1,234.6	7.16	6.8	11.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	99.1	167.6	1,146.7	7.18	6.8	11.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	99.5	145.6	1,097.3	7.25	7.5	11.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	93.6	133.4	1,012.8	7.27	7.6	10.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	88.6	121.9	936.6	7.28	7.7	10.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	84.5	112.4	873.9	7.30	7.8	10.3	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	85.8	105.1	873.6	7.39	8.3	10.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	82.1	96.6	815.2	7.38	8.4	9.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	78.4	88.4	758.3	7.39	8.6	9.7	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	83.9	120.4	819.1	6.52	6.8	9.8	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	79.3	110.3	757.4	6.52	6.9	9.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	75.0	100.3	697.0	6.53	7.0	9.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	71.3	91.5	645.8	6.53	7.1	9.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	70.4	80.4	618.8	6.70	7.7	8.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	67.0	72.9	571.5	6.70	7.8	8.5	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	63.8	65.7	525.6	6.72	8.0	8.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	58.3	61.2	480.6	6.64	8.2	7.8	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	60.0	76.5	477.1	5.87	6.2	8.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	57.4	69.8	442.8	5.88	6.3	7.7	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	54.9	63.0	408.5	5.88	6.5	7.4	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	54.8	55.9	397.9	5.99	7.1	7.3	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	50.2	52.6	366.1	5.97	7.3	7.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	44.0	50.3	331.4	5.90	7.5	6.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	52.7	86.2	405.6	4.89	4.7	7.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	50.5	78.1	376.8	4.93	4.8	7.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	48.8	70.7	352.3	4.96	5.0	7.2	11.18	11.95	8.98	0.682	5.26
12 x 10 x 58 I-T	37.58	51.3	75.9	380.4	5.18	5.0	7.4	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	49.4	69.2	354.9	5.17	5.1	7.2	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	50.5	64.3	351.6	5.19	5.5	7.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	48.3	58.3	324.9	5.19	5.6	6.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	46.1	52.6	299.4	5.21	5.7	6.5	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	46.1	47.2	291.3	5.28	6.2	6.3	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	41.2	43.7	261.3	5.26	6.3	6.0	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	36.1	41.8	236.1	5.22	6.5	5.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	28.3	41.4	211.1	5.12	7.5	5.1	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	24.4	39.4	187.1	5.01	7.7	4.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	20.6	37.4	162.9	4.83	7.9	4.4	3.86	12.00	4.00	0.269	2.76



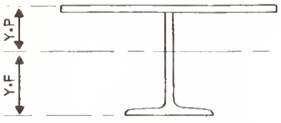
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 14 I-T	11.22	17.7	35.9	144.1	4.74	8.1	4.0	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	14.8	34.3	126.8	4.65	8.6	3.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	42.1	61.0	270.8	4.42	4.4	6.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	41.1	57.4	259.3	4.44	4.5	6.3	10.01	10.57	8.27	0.685	4.54
31 T	31.01	39.9	52.5	243.6	4.46	4.6	6.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	39.2	49.4	226.7	4.39	4.6	5.8	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	37.1	43.0	202.9	4.36	4.7	5.5	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	35.1	36.3	178.2	4.31	4.9	5.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	32.6	36.0	179.0	4.46	5.5	5.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	28.3	34.3	160.1	4.42	5.7	4.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	23.4	32.5	138.1	4.30	5.9	4.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	21.2	33.2	135.6	4.31	6.4	4.1	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	18.5	31.8	121.5	4.20	6.6	3.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.1	30.5	108.1	4.07	6.7	3.5	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	12.6	28.8	88.5	3.92	7.0	3.1	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.8	27.9	74.3	3.75	7.6	2.7	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	33.7	44.8	180.3	3.89	4.0	5.3	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	32.9	41.5	170.9	3.90	4.1	5.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	32.0	38.1	160.9	3.92	4.2	5.0	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	31.3	51.0	163.0	3.34	3.2	5.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	30.3	47.2	153.6	3.37	3.3	5.1	10.43	8.08	8.54	0.795	3.92
32 T	31.96	29.3	43.4	144.2	3.39	3.3	4.9	9.40	8.00	8.50	0.715	3.54
29 T	28.97	28.5	39.9	136.0	3.42	3.4	4.8	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	28.5	34.6	131.1	3.54	3.8	4.6	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	27.7	31.4	122.5	3.55	3.9	4.4	6.62	8.06	7.04	0.563	2.78
20 T	19.99	27.0	28.5	114.3	3.56	4.0	4.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	25.4	26.3	105.7	3.52	4.2	4.0	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	25.7	27.6	110.6	3.60	4.3	4.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	22.3	26.4	98.6	3.57	4.4	3.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	18.7	26.2	91.4	3.57	4.9	3.5	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.7	25.0	79.6	3.47	5.1	3.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.6	24.8	73.6	3.39	5.4	3.0	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.6	23.7	64.3	3.27	5.5	2.7	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.2	22.6	53.3	3.17	5.8	2.4	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	5.9	21.1	38.2	2.86	6.4	1.8	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	23.2	24.2	86.5	3.15	3.6	3.7	5.59	7.06	6.78	0.513	2.20
17 T	17.00	21.9	22.7	80.9	3.16	3.7	3.6	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.1	22.2	73.6	3.13	3.9	3.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.7	19.8	47.2	2.89	4.9	2.4	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.4	17.8	25.7	2.42	5.8	1.4	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	19.7	20.6	64.1	2.76	3.1	3.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.1	19.1	58.4	2.76	3.2	3.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	15.9	18.6	53.4	2.74	3.4	2.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.6	19.1	46.8	2.71	4.0	2.5	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.8	18.5	46.2	2.69	3.9	2.5	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.0	17.9	40.6	2.62	4.1	2.3	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.4	17.4	35.5	2.51	4.2	2.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.3	17.2	35.1	2.51	4.2	2.0	2.43	6.00	4.00	0.269	1.38



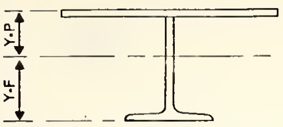
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
6 x 4 x 7 T	7.04	7.1	16.8	31.0	2.44	4.4	1.8	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.0	16.2	26.5	2.33	4.4	1.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.8	16.3	26.6	2.34	4.6	1.6	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.1	14.7	16.1	1.98	5.2	1.1	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.2	15.7	40.0	2.33	2.8	2.5	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.3	15.3	36.1	2.31	2.9	2.4	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.2	14.8	31.4	2.25	3.1	2.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.9	15.0	30.1	2.25	3.4	2.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.7	14.6	26.8	2.18	3.5	1.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.6	14.1	23.7	2.11	3.6	1.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.1	13.5	19.3	2.00	3.8	1.4	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.8	13.0	15.5	1.87	4.1	1.2	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.1	11.9	20.8	1.85	2.6	1.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.8	11.5	18.2	1.80	2.7	1.6	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.8	11.4	16.5	1.76	2.9	1.4	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.8	11.0	14.3	1.68	3.0	1.3	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.9	10.6	11.9	1.61	3.1	1.1	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	9.8	8.0	1.40	3.4	0.8	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	8.2	5.5	1.18	3.1	0.7	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.0	8.6	10.7	1.39	2.1	1.2	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.6	8.0	8.1	1.29	2.2	1.0	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	7.5	6.1	1.18	2.4	0.8	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	6.6	3.4	0.95	2.7	0.5	0.65	3.00	1.84	0.167	0.34



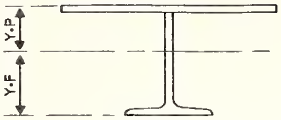
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 1-T	84.70	175.9	273.2	2,630.9	9.55	9.6	15.0	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	166.8	252.8	2,455.9	9.58	9.7	14.7	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	158.0	231.7	2,281.3	9.62	9.8	14.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	162.3	210.2	2,249.3	9.59	10.7	13.9	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	152.3	189.1	2,054.8	9.60	10.9	13.5	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	144.5	171.0	1,894.2	9.58	11.1	13.1	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 1-T	70.15	140.5	187.5	1,720.4	8.37	9.2	12.2	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	128.3	162.1	1,514.2	8.38	9.3	11.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	125.2	147.8	1,458.6	8.58	9.9	11.7	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	121.0	138.4	1,381.3	8.58	10.0	11.4	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	115.7	126.5	1,284.5	8.57	10.2	11.1	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	112.8	189.1	1,286.2	7.03	6.8	11.4	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	123.4	202.3	1,438.0	7.34	7.1	11.7	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	117.5	187.5	1,343.9	7.35	7.2	11.4	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	111.8	172.6	1,251.6	7.36	7.3	11.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	112.0	149.9	1,192.4	7.41	8.0	10.6	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	106.1	137.4	1,104.0	7.44	8.0	10.4	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	101.0	125.6	1,023.3	7.44	8.1	10.1	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	96.8	115.8	956.6	7.45	8.3	9.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	98.1	108.3	953.6	7.53	8.8	9.7	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	94.3	99.6	891.1	7.51	9.0	9.5	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	90.5	91.1	830.0	7.51	9.1	9.2	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 1-T	54.99	95.0	124.1	893.4	6.66	7.2	9.4	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	90.4	113.7	828.1	6.66	7.3	9.2	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	85.9	103.3	763.8	6.67	7.4	8.9	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	82.2	94.3	708.8	6.67	7.5	8.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	81.4	82.8	677.9	6.81	8.2	8.3	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	75.0	77.9	626.8	6.80	8.4	8.0	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	67.5	74.6	577.0	6.81	8.5	7.7	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	60.0	71.8	527.0	6.70	8.8	7.3	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 1-T	36.44	69.6	78.7	525.5	5.99	6.7	7.5	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	67.0	71.8	488.0	5.98	6.8	7.3	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	64.4	64.7	450.4	5.97	7.0	7.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	57.5	64.4	437.5	6.06	7.6	6.8	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	51.6	62.1	402.4	6.02	7.8	6.5	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	45.2	59.6	363.6	5.93	8.0	6.1	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	61.2	89.3	451.3	5.04	5.1	7.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	58.9	80.7	419.6	5.07	5.2	7.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	57.2	73.0	392.1	5.09	5.4	6.9	11.18	11.95	8.98	0.682	5.26
12 x 10 x 58 1-T	37.58	60.0	78.0	422.5	5.31	5.4	7.0	11.05	12.18	10.01	0.641	4.37
53 1-T	34.55	58.0	71.1	394.2	5.29	5.5	6.8	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 1-T	33.81	59.0	66.1	388.4	5.29	5.9	6.6	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	56.7	59.8	359.2	5.28	6.0	6.3	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	53.9	54.5	331.1	5.28	6.1	6.1	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	48.5	54.5	321.3	5.34	6.6	5.9	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	42.2	52.0	287.8	5.30	6.8	5.5	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	36.9	50.0	259.6	5.23	7.0	5.2	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	29.0	49.4	230.1	5.09	7.9	4.7	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	25.0	47.2	203.4	4.95	8.1	4.3	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	21.1	44.9	176.4	4.76	8.4	3.9	3.86	12.00	4.00	0.269	2.76



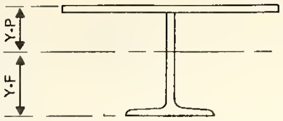
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 14 I-T	11.22	18.1	43.3	155.5	4.63	8.6	3.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	15.1	41.6	136.4	4.51	9.0	3.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	49.5	63.1	302.3	4.54	4.8	6.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	48.5	59.2	289.4	4.55	4.9	6.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	47.2	54.2	271.8	4.56	5.0	5.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	46.3	50.8	251.9	4.47	5.0	5.4	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	44.1	44.1	225.3	4.43	5.1	5.1	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	37.1	41.9	197.3	4.36	5.3	4.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	33.4	42.9	197.3	4.48	5.9	4.6	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	28.9	41.1	176.0	4.42	6.1	4.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.0	39.1	151.2	4.27	6.3	3.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	21.7	39.8	147.6	4.26	6.8	3.7	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.0	38.2	131.9	4.14	7.0	3.4	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.5	36.8	117.0	3.99	7.1	3.2	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	12.8	34.8	95.0	3.80	7.4	2.7	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	10.0	33.8	79.1	3.60	7.9	2.3	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	40.1	46.3	201.9	3.98	4.4	5.0	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	39.2	42.8	191.1	3.98	4.5	4.9	8.09	9.06	7.53	0.630	3.53
25 T	24.99	38.3	39.2	179.7	3.99	4.6	4.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	37.0	52.9	183.7	3.45	3.5	5.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	35.9	48.9	173.1	3.47	3.5	4.8	10.43	8.08	8.54	0.795	3.92
32 T	31.96	34.9	44.8	162.5	3.49	3.6	4.7	9.40	8.00	8.50	0.715	3.54
29 T	28.97	34.1	41.2	153.1	3.50	3.7	4.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	34.2	35.6	146.7	3.60	4.1	4.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	32.3	33.3	136.9	3.60	4.2	4.1	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.3	32.5	127.5	3.60	4.4	3.9	5.88	8.00	7.00	0.503	2.45
18 T	18.36	26.1	31.7	117.5	3.55	4.5	3.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	26.3	33.1	122.3	3.61	4.6	3.7	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	22.7	31.8	108.7	3.56	4.8	3.4	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.1	31.6	100.2	3.54	5.3	3.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.0	30.2	86.7	3.42	5.4	2.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.9	29.9	79.8	3.33	5.7	2.7	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.9	28.6	69.4	3.19	5.9	2.4	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.4	27.5	57.1	3.05	6.1	2.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	6.0	25.6	40.3	2.72	6.7	1.6	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	24.8	28.0	96.7	3.18	3.9	3.4	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.4	27.6	90.0	3.17	4.0	3.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.5	26.9	81.6	3.12	4.2	3.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.9	24.1	51.1	2.81	5.2	2.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.5	21.6	27.0	2.28	6.0	1.3	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.2	23.9	71.8	2.79	3.4	3.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.5	23.2	65.1	2.77	3.5	2.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.2	22.7	59.2	2.73	3.7	2.6	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	11.8	23.1	50.9	2.66	4.3	2.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.0	22.5	50.5	2.65	4.2	2.2	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.2	21.7	44.2	2.56	4.3	2.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.6	21.1	38.4	2.44	4.5	1.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.5	20.9	37.9	2.44	4.5	1.8	2.43	6.00	4.00	0.269	1.38



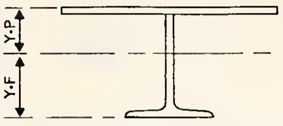
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
6 x 4 x 7 T	7.04	7.2	20.4	33.3	2.35	4.6	1.6	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.1	19.6	28.3	2.23	4.7	1.4	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	19.8	28.4	2.24	4.8	1.4	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.2	17.7	16.9	1.85	5.3	1.0	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.5	19.2	44.6	2.33	3.1	2.3	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.6	18.7	40.1	2.29	3.2	2.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.4	18.0	34.5	2.21	3.3	1.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.1	18.3	32.8	2.21	3.6	1.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.9	17.7	29.1	2.13	3.7	1.6	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.7	17.2	25.6	2.04	3.8	1.5	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	16.4	20.6	1.91	4.0	1.3	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	15.7	16.4	1.76	4.2	1.0	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.3	14.5	22.9	1.83	2.8	1.6	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.0	14.0	19.9	1.76	2.9	1.4	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.9	13.8	17.9	1.70	3.0	1.3	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.9	13.3	15.4	1.62	3.1	1.2	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.9	12.8	12.7	1.53	3.2	1.0	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	11.6	8.4	1.31	3.6	0.7	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	9.7	5.7	1.10	3.2	0.6	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.1	10.5	11.7	1.36	2.3	1.1	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	9.7	8.8	1.24	2.4	0.9	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	9.0	6.5	1.12	2.5	0.7	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	7.6	3.6	0.88	2.8	0.5	0.65	3.00	1.84	0.167	0.34

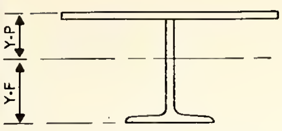


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	195.4	280.6	2,834.9	9.75	10.1	14.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	186.1	259.7	2,653.3	9.79	10.2	14.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	177.3	238.0	2,470.4	9.82	10.4	13.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	181.2	216.0	2,423.5	9.77	11.2	13.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	171.0	194.4	2,219.2	9.77	11.4	13.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	163.1	175.9	2,048.8	9.74	11.7	12.6	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	157.0	192.8	1,856.3	8.53	9.6	11.8	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	144.7	166.7	1,639.7	8.54	9.8	11.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	141.7	152.0	1,580.4	8.72	10.4	11.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	137.4	142.3	1,498.1	8.72	10.5	10.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	130.0	132.0	1,394.4	8.70	10.7	10.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	127.3	195.0	1,404.1	7.21	7.2	11.0	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	138.3	208.0	1,561.3	7.51	7.5	11.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	132.4	192.8	1,462.3	7.52	7.6	11.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	126.6	177.5	1,364.7	7.53	7.7	10.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	126.5	154.1	1,294.5	7.56	8.4	10.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	120.5	141.3	1,201.1	7.58	8.5	10.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	115.3	129.0	1,115.0	7.57	8.6	9.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	111.0	118.9	1,043.4	7.57	8.8	9.4	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	111.3	112.4	1,037.5	7.64	9.3	9.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	102.3	108.4	970.2	7.61	9.5	8.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	93.6	104.5	904.1	7.60	9.7	8.6	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	107.9	127.7	972.7	6.79	7.6	9.0	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	103.2	116.9	903.0	6.79	7.7	8.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	98.6	106.2	834.0	6.78	7.9	8.5	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	94.8	96.8	774.6	6.77	8.0	8.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	85.0	94.0	739.0	6.89	8.7	7.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	77.0	90.5	683.5	6.87	8.9	7.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	69.2	87.1	629.1	6.85	9.1	7.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	61.5	84.1	573.6	6.73	9.3	6.8	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	88.8	112.1	718.5	6.09	6.4	8.1	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	85.7	102.0	674.2	6.09	6.6	7.9	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	82.3	93.7	622.9	6.09	6.6	7.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	80.7	80.8	575.5	6.07	7.1	7.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	73.5	78.1	534.3	6.05	7.3	6.8	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	66.2	75.4	493.0	6.02	7.5	6.5	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	58.9	75.5	477.4	6.09	8.1	6.3	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	52.8	73.0	438.6	6.03	8.3	6.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	46.2	70.3	395.3	5.92	8.6	5.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	71.0	92.0	499.6	5.17	5.4	7.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	68.7	83.1	464.4	5.19	5.6	6.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	66.8	75.1	433.5	5.19	5.8	6.5	11.18	11.95	8.98	0.682	5.26
12 x 10 x 58 I-T	37.58	70.0	79.9	466.1	5.41	5.8	6.7	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	67.9	72.8	434.6	5.37	6.0	6.4	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	67.7	68.8	426.2	5.36	6.3	6.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	61.3	66.4	394.1	5.34	6.4	5.9	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	55.1	64.1	363.0	5.32	6.6	5.7	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	49.6	64.1	351.2	5.36	7.1	5.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	43.1	61.5	313.9	5.29	7.3	5.1	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	37.7	59.4	282.4	5.20	7.5	4.8	5.53	11.94	5.50	0.400	2.86



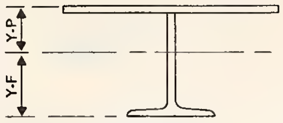
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
12 x 4 x 22 I-T	16.80	29.7	58.4	248.2	5.02	8.4	4.2	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	25.5	56.0	218.8	4.87	8.6	3.9	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	21.6	53.4	189.2	4.65	8.8	3.5	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	18.4	51.6	166.0	4.50	9.0	3.2	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	15.4	49.8	145.0	4.36	9.4	2.9	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	58.0	64.9	335.0	4.63	5.2	5.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	57.0	60.9	320.5	4.64	5.3	5.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	55.6	55.7	300.5	4.63	5.4	5.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	52.0	54.5	277.5	4.52	5.3	5.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	45.1	52.1	247.7	4.46	5.5	4.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	37.9	49.7	216.2	4.37	5.7	4.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	34.1	50.9	215.1	4.47	6.3	4.2	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	29.5	48.9	191.3	4.38	6.5	3.9	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.4	46.6	163.6	4.21	6.7	3.5	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	22.1	47.3	159.0	4.19	7.2	3.4	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.3	45.5	141.7	4.04	7.3	3.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.8	43.8	125.3	3.89	7.5	2.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.0	41.7	101.0	3.66	7.8	2.4	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.1	40.4	83.4	3.44	8.2	2.1	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 32 T	31.96	46.7	51.8	227.2	3.99	4.4	4.9	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	47.4	47.6	223.8	4.04	4.7	4.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	43.9	46.5	211.5	4.04	4.8	4.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	40.2	45.5	198.6	4.03	4.9	4.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	43.5	54.6	205.2	3.54	3.8	4.7	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	42.4	50.4	193.3	3.55	3.8	4.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	41.4	46.1	181.3	3.56	3.9	4.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	40.5	42.3	170.4	3.56	4.0	4.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	36.5	40.7	162.5	3.64	4.4	4.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	33.1	39.7	151.2	3.62	4.6	3.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.9	38.9	140.5	3.61	4.7	3.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	26.6	37.9	129.0	3.54	4.8	3.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	26.8	39.4	133.7	3.60	5.0	3.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	23.1	38.0	118.4	3.53	5.1	3.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.4	37.8	108.4	3.48	5.6	2.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.3	36.2	93.4	3.34	5.7	2.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.2	35.7	85.6	3.24	6.0	2.4	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.1	34.2	74.1	3.09	6.1	2.2	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.5	32.9	60.5	2.92	6.4	1.8	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.1	30.5	42.2	2.56	6.9	1.4	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	25.4	33.6	106.6	3.19	4.2	3.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.9	33.1	98.9	3.16	4.3	3.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.9	32.3	89.1	3.09	4.5	2.8	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.5 T	8.60	10.1	29.0	54.7	2.71	5.4	1.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.5	25.6	28.2	2.14	6.2	1.1	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.6	28.7	79.3	2.79	3.7	2.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.8	28.0	71.5	2.75	3.8	2.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.5	27.4	64.7	2.70	3.9	2.4	3.98	5.98	6.50	0.400	1.43



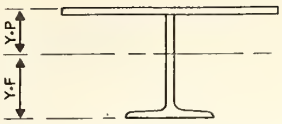
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 4 x 16 I-T	11.07	12.0	27.6	54.8	2.59	4.6	2.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.3	27.0	54.6	2.59	4.4	2.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.4	26.1	47.5	2.48	4.6	1.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.7	25.2	40.9	2.35	4.7	1.6	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.6	25.0	40.4	2.35	4.7	1.6	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.3	24.4	35.4	2.25	4.8	1.5	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.2	23.4	29.9	2.12	4.9	1.3	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	23.6	29.9	2.13	5.0	1.3	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.2	20.8	17.5	1.73	5.5	0.8	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.8	23.1	49.0	2.31	3.3	2.1	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.8	22.5	43.7	2.26	3.4	1.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.6	21.7	37.4	2.16	3.5	1.7	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.2	21.9	35.3	2.14	3.8	1.6	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.0	21.2	31.2	2.05	3.9	1.5	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.8	20.5	27.3	1.96	4.0	1.3	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.3	19.5	21.8	1.82	4.1	1.1	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	18.5	17.2	1.66	4.4	0.9	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.4	17.4	24.9	1.78	3.0	1.4	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.1	16.8	21.5	1.70	3.0	1.3	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.0	16.5	19.1	1.64	3.2	1.2	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.0	15.8	16.4	1.55	3.3	1.0	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	15.2	13.4	1.45	3.4	0.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	13.6	8.7	1.22	3.7	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	11.2	6.0	1.02	3.3	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.2	12.5	12.6	1.32	2.4	1.0	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	11.5	9.4	1.19	2.5	0.8	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	10.5	6.9	1.06	2.6	0.7	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	8.6	3.7	0.82	2.9	0.4	0.65	3.00	1.84	0.167	0.34



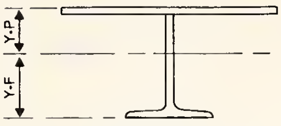
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	216.2	287.4	3,040.7	9.93	10.6	14.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	206.9	265.9	2,851.3	9.97	10.7	13.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	197.9	243.7	2,659.0	9.99	10.9	13.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	201.5	221.4	2,597.1	9.92	11.7	12.9	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	191.1	199.2	2,382.1	9.91	12.0	12.5	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	180.2	182.9	2,200.9	9.86	12.2	12.0	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	174.7	197.6	1,991.9	8.66	10.1	11.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	162.1	170.8	1,763.6	8.66	10.3	10.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	155.7	159.4	1,699.9	8.83	10.9	10.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	145.7	155.0	1,612.0	8.82	11.1	10.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	133.1	149.4	1,501.0	8.78	11.3	10.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	142.8	200.3	1,522.2	7.37	7.6	10.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	154.3	213.2	1,685.2	7.67	7.9	10.9	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	148.3	197.5	1,580.6	7.67	8.0	10.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	142.3	181.8	1,477.1	7.68	8.1	10.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	142.0	157.9	1,395.4	7.68	8.8	9.8	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	135.9	144.6	1,296.5	7.69	9.0	9.5	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	130.6	132.1	1,204.4	7.67	9.1	9.2	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	121.6	126.2	1,127.5	7.66	9.3	8.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	113.9	127.6	1,118.5	7.72	9.8	8.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	104.7	123.5	1,046.1	7.68	10.0	8.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	95.7	119.5	974.7	7.65	10.2	8.2	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	121.7	130.8	1,050.6	6.90	8.0	8.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	116.9	119.7	976.1	6.88	8.2	8.4	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	108.6	112.2	902.0	6.86	8.3	8.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	99.0	108.2	837.8	6.84	8.5	7.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	86.9	107.6	797.1	6.94	9.2	7.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	78.6	103.9	736.9	6.89	9.4	7.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	70.6	100.4	677.6	6.86	9.6	6.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	62.7	97.1	616.7	6.71	9.8	6.3	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	101.2	114.7	780.8	6.19	6.8	7.7	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	98.0	104.3	732.9	6.17	7.0	7.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	94.4	95.7	677.0	6.16	7.1	7.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	82.4	92.7	623.1	6.12	7.6	6.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	74.9	89.9	578.1	6.08	7.7	6.4	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	67.4	87.0	532.8	6.04	7.9	6.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	60.0	87.3	514.5	6.09	8.6	5.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	53.8	84.6	471.8	6.01	8.8	5.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	47.1	81.7	424.2	5.87	9.0	5.2	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	80.7	81.5	507.8	5.47	6.2	6.3	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	74.2	78.4	472.9	5.42	6.4	6.0	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	81.5	94.4	546.6	5.26	5.8	6.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	79.0	85.1	507.6	5.27	6.0	6.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	76.8	77.1	473.0	5.26	6.2	6.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	69.1	79.2	462.1	5.40	6.7	5.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	62.4	76.7	426.9	5.36	6.8	5.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	56.1	74.3	392.6	5.33	7.0	5.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	50.6	74.4	378.7	5.35	7.5	5.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	43.8	71.6	337.7	5.26	7.7	4.7	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	38.3	69.3	302.8	5.14	7.9	4.4	5.53	11.94	6.50	0.400	2.86

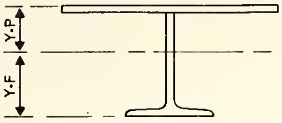


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 22 I-T	16.80	30.2	68.0	264.4	4.94	8.8	3.9	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	26.0	65.4	232.3	4.76	8.9	3.6	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	21.9	62.4	200.2	4.53	9.1	3.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	18.7	60.4	175.0	4.36	9.3	2.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	15.6	58.4	152.3	4.19	9.7	2.6	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	66.4	67.1	366.1	4.69	5.5	5.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	62.3	66.1	349.9	4.69	5.6	5.3	10.01	10.57	8.27	0.685	4.54
31 T	31.01	56.8	64.6	327.5	4.67	5.8	5.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	53.0	63.2	301.5	4.55	5.7	4.8	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	45.9	60.6	268.4	4.47	5.9	4.4	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	38.5	57.9	233.4	4.34	6.1	4.0	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	34.7	59.3	231.2	4.43	6.7	3.9	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	30.0	57.2	205.0	4.32	6.8	3.6	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.8	54.5	174.5	4.12	7.0	3.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	22.5	55.2	168.9	4.09	7.5	3.1	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.6	53.2	150.1	3.94	7.6	2.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.1	51.2	132.3	3.77	7.8	2.6	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.2	48.8	106.0	3.52	8.0	2.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.2	47.1	87.0	3.28	8.5	1.8	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	55.5	57.3	263.4	4.03	4.6	4.7	10.28	9.00	8.75	0.751	3.94
32 T	31.96	53.0	54.4	249.1	4.03	4.7	4.6	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	48.6	55.1	244.4	4.07	5.0	4.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	44.8	54.2	230.5	4.06	5.1	4.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	40.9	53.1	216.0	4.04	5.3	4.1	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	50.5	56.1	226.0	3.61	4.0	4.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	49.4	51.7	212.6	3.61	4.1	4.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	47.2	48.2	199.0	3.60	4.2	4.1	9.40	8.00	8.50	0.715	3.54
29 T	28.97	43.2	47.3	186.7	3.60	4.3	4.0	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	37.3	47.5	177.0	3.65	4.7	3.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	33.7	46.5	164.3	3.62	4.9	3.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	30.4	45.6	152.2	3.59	5.0	3.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.1	44.5	139.3	3.51	5.1	3.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	27.3	46.1	144.0	3.56	5.3	3.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	23.5	44.5	127.0	3.47	5.4	2.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.7	44.2	115.6	3.41	5.9	2.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.5	42.4	99.2	3.25	6.0	2.3	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.4	41.7	90.5	3.14	6.3	2.2	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.2	39.9	78.1	2.98	6.4	2.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.6	38.4	63.3	2.79	6.6	1.6	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.2	35.4	43.8	2.42	7.1	1.2	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	25.8	39.5	115.6	3.17	4.5	2.9	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.2	38.9	106.8	3.13	4.6	2.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.2	37.9	95.8	3.05	4.7	2.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.2	34.0	57.6	2.61	5.6	1.7	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.6	29.6	29.1	2.02	6.4	1.0	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.0	33.8	86.1	2.77	3.9	2.5	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.1	32.9	77.2	2.72	4.0	2.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.7	32.2	69.6	2.65	4.2	2.2	3.98	5.98	6.50	0.400	1.43



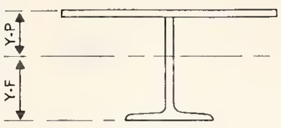
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 4 x 16 I-T	11.07	12.2	32.2	58.2	2.52	4.8	1.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.4	31.6	58.0	2.52	4.7	1.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.5	30.5	50.3	2.40	4.8	1.6	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.8	29.4	43.1	2.26	4.9	1.5	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.7	29.2	42.6	2.26	4.9	1.5	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.4	28.4	37.1	2.15	5.0	1.3	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.2	27.2	31.2	2.02	5.0	1.1	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.0	27.4	31.2	2.02	5.2	1.1	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.2	23.8	18.1	1.62	5.6	0.8	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.1	27.2	52.9	2.28	3.5	1.9	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.0	26.4	47.0	2.21	3.6	1.8	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.7	25.5	39.9	2.10	3.7	1.6	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.4	25.6	37.5	2.07	4.0	1.5	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.1	24.8	32.9	1.98	4.1	1.3	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.9	23.9	28.7	1.88	4.1	1.2	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.3	22.6	22.8	1.73	4.3	1.0	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.0	21.3	17.8	1.57	4.5	0.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.5	20.4	26.6	1.73	3.1	1.3	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.2	19.6	22.8	1.65	3.2	1.2	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.0	19.2	20.2	1.58	3.4	1.1	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.1	18.3	17.2	1.48	3.4	0.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	17.5	14.0	1.38	3.5	0.8	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	15.3	9.0	1.15	3.8	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	12.5	6.2	0.96	3.4	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.3	14.5	13.4	1.27	2.6	0.9	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	13.2	9.9	1.13	2.6	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	11.9	7.2	1.00	2.7	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	9.5	3.8	0.76	2.9	0.4	0.65	3.00	1.84	0.167	0.34

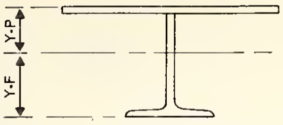


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	239.0	293.7	3,251.3	10.09	11.1	13.6	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	229.5	271.7	3,053.0	10.12	11.2	13.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	220.5	249.0	2,850.0	10.13	11.4	12.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	223.6	226.3	2,772.9	10.04	12.3	12.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	203.6	213.0	2,545.7	10.02	12.5	12.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	184.2	204.6	2,352.8	9.96	12.8	11.5	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	194.0	202.1	2,129.2	8.77	10.5	11.0	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	174.5	181.2	1,887.8	8.75	10.8	10.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	159.1	178.7	1,818.9	8.91	11.4	10.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	148.9	174.1	1,724.9	8.88	11.6	9.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	135.9	168.4	1,605.9	8.84	11.8	9.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	159.6	205.2	1,642.5	7.51	8.0	10.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	171.8	218.0	1,811.4	7.80	8.3	10.5	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	165.6	201.9	1,700.6	7.80	8.4	10.3	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	159.5	185.7	1,590.4	7.79	8.6	10.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	158.9	161.4	1,496.7	7.77	9.3	9.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	147.7	152.7	1,391.6	7.77	9.4	9.1	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	134.8	147.2	1,293.0	7.74	9.6	8.8	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	124.0	142.7	1,210.3	7.72	9.8	8.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	116.3	144.2	1,198.1	7.76	10.3	8.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	106.8	139.9	1,120.0	7.70	10.5	8.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	97.5	135.8	1,042.9	7.66	10.7	7.7	10.76	18.00	7.50	0.570	6.44
16 x 11 1/2 x 96 I-T	64.24	141.7	167.7	1,282.0	7.03	7.6	9.0	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	136.9	154.0	1,198.6	7.01	7.8	8.8	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	133.6	136.7	1,128.3	6.97	8.4	8.3	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	122.3	131.8	1,048.6	6.95	8.6	8.0	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	110.8	126.9	968.9	6.91	8.7	7.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	100.9	122.8	899.5	6.88	8.9	7.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	88.6	122.3	853.4	6.95	9.6	7.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	80.1	118.5	788.2	6.89	9.8	6.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	71.8	114.9	723.7	6.83	10.1	6.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	63.8	111.2	657.3	6.66	10.3	5.9	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	122.9	138.7	1,001.8	6.45	7.2	8.2	17.07	15.00	10.50	0.850	8.46
54 T	53.99	120.4	127.4	946.5	6.43	7.4	7.9	15.88	14.91	10.48	0.760	8.17
14 x 12 x 78 I-T	50.45	113.4	124.5	856.5	6.26	6.9	7.6	14.84	14.06	12.00	0.718	6.01
14 x 10 x 74 I-T	49.25	114.6	117.0	842.6	6.26	7.2	7.4	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	106.4	111.3	790.7	6.24	7.4	7.1	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	97.4	107.6	729.8	6.21	7.5	6.8	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	83.8	105.7	669.3	6.14	8.0	6.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	76.2	102.7	620.2	6.09	8.1	6.0	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	68.5	99.7	570.7	6.02	8.3	5.7	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	61.0	100.0	549.5	6.05	9.0	5.5	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	54.7	97.2	502.9	5.96	9.2	5.2	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	47.8	94.0	450.9	5.80	9.4	4.8	6.38	13.86	6.73	0.383	3.74
12 x 12 x 50 T	50.01	92.3	109.5	619.5	5.34	5.7	6.7	14.71	12.00	12.00	0.775	5.61
12 x 10 x 58 I-T	37.58	82.9	92.3	548.3	5.51	6.6	5.9	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	75.4	89.8	509.9	5.45	6.8	5.7	10.16	12.06	10.00	0.576	4.16



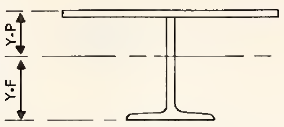
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 9 x 47 T	46.95	92.9	96.5	593.0	5.33	6.1	6.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	86.9	90.3	549.9	5.33	6.3	6.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	78.4	88.2	511.5	5.30	6.5	5.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	70.3	90.5	496.7	5.41	7.1	5.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	63.5	87.9	458.2	5.36	7.2	5.2	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	56.9	85.4	420.6	5.31	7.4	4.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	51.3	85.5	404.6	5.31	7.9	4.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	44.4	82.5	359.7	5.19	8.1	4.4	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	38.8	80.0	321.6	5.06	8.3	4.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	30.6	78.4	279.1	4.83	9.1	3.6	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	26.3	75.4	244.5	4.64	9.3	3.2	4.34	12.16	4.01	0.349	2.91
16.51-T	13.11	22.2	71.9	210.1	4.39	9.5	2.9	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	18.9	69.7	182.9	4.21	9.7	2.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.81-T	9.34	15.8	67.6	158.6	4.03	10.0	2.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	67.8	77.0	396.4	4.72	5.8	5.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	63.5	75.9	378.4	4.71	6.0	5.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	57.8	74.3	353.4	4.68	6.1	4.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	53.8	72.6	324.4	4.55	6.0	4.5	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	46.6	69.7	288.0	4.45	6.2	4.1	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	39.1	66.8	249.4	4.30	6.4	3.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	35.2	68.4	246.1	4.37	7.0	3.6	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	30.3	66.1	217.4	4.24	7.2	3.3	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	25.1	63.0	184.3	4.02	7.4	2.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	22.7	63.7	177.9	3.98	7.8	2.8	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.9	61.4	157.7	3.82	7.9	2.6	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.3	59.1	138.6	3.65	8.0	2.3	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	13.3	56.2	110.3	3.38	8.3	2.0	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	10.3	54.2	90.1	3.13	8.7	1.7	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	58.5	63.9	286.3	4.07	4.9	4.5	10.28	9.00	8.75	0.751	3.94
32 T	31.96	53.9	62.8	270.2	4.06	5.0	4.3	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	49.5	63.5	264.2	4.08	5.3	4.2	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	45.6	62.5	248.6	4.06	5.5	4.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	41.6	61.3	232.4	4.02	5.6	3.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	57.3	58.1	246.3	3.65	4.3	4.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	52.8	56.9	231.4	3.64	4.4	4.1	10.43	8.08	8.54	0.795	3.92
32 T	31.96	48.1	55.7	216.1	3.63	4.5	3.9	9.40	8.00	8.50	0.715	3.54
29 T	28.97	44.0	54.6	202.3	3.61	4.6	3.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	37.9	54.9	190.7	3.64	5.0	3.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	34.3	53.8	176.6	3.60	5.2	3.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	30.8	52.8	163.1	3.55	5.3	3.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.5	51.5	148.8	3.46	5.4	2.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	27.6	53.3	153.4	3.51	5.6	2.9	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	23.7	51.5	134.8	3.40	5.7	2.6	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	19.9	51.1	122.1	3.32	6.1	2.4	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	16.7	49.0	104.3	3.15	6.2	2.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	14.6	48.0	94.9	3.04	6.5	2.0	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	12.4	46.0	81.6	2.87	6.6	1.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.7	44.2	65.7	2.67	6.8	1.5	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.51-T	5.19	6.2	40.5	45.1	2.30	7.3	1.1	1.53	8.00	2.28	0.188	1.08

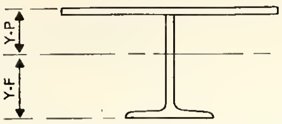


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	26.2	45.8	123.9	3.13	4.7	2.7	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.5	45.1	114.0	3.08	4.8	2.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.4	43.9	101.9	2.98	5.0	2.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.3	39.1	60.2	2.51	5.8	1.5	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.6	33.6	29.9	1.90	6.5	0.9	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.3	39.2	92.3	2.74	4.1	2.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.4	38.2	82.4	2.67	4.3	2.2	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.9	37.4	73.9	2.59	4.4	2.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.3	37.1	61.2	2.44	5.0	1.6	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.6	36.5	61.1	2.44	4.9	1.7	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.6	35.1	52.7	2.31	5.0	1.5	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.9	33.8	45.0	2.17	5.0	1.3	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.8	33.6	44.5	2.17	5.1	1.3	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.5	32.5	38.6	2.06	5.1	1.2	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.3	31.0	32.4	1.92	5.2	1.0	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.1	31.2	32.3	1.92	5.3	1.0	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.3	26.7	18.5	1.52	5.7	0.7	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.3	31.5	56.4	2.23	3.7	1.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.2	30.6	49.9	2.16	3.8	1.6	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.8	29.4	42.2	2.04	3.9	1.4	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.5	29.5	39.4	2.00	4.2	1.3	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.2	28.4	34.5	1.90	4.2	1.2	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.0	27.3	30.0	1.80	4.3	1.1	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.4	25.7	23.7	1.65	4.4	0.9	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.0	24.0	18.4	1.48	4.6	0.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.7	23.4	28.1	1.68	3.2	1.2	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.2	22.5	24.0	1.59	3.3	1.1	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.1	21.9	21.2	1.51	3.5	1.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.1	20.8	18.0	1.42	3.5	0.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.1	19.7	14.6	1.31	3.6	0.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	17.0	9.3	1.08	3.8	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	13.6	6.3	0.90	3.4	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.3	16.6	14.1	1.23	2.7	0.9	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.9	14.9	10.3	1.08	2.7	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	13.3	7.4	0.95	2.7	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	10.2	3.9	0.72	3.0	0.4	0.65	3.00	1.84	0.167	0.34



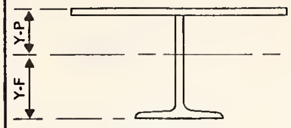
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

17.85# PLATE WEIGHT

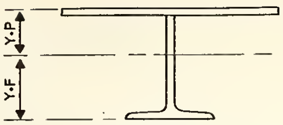
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	291.0	305.3	3,685.6	10.34	12.1	12.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	281.4	282.2	3,465.8	10.34	12.3	12.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	258.3	271.9	3,237.6	10.33	12.5	11.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	235.2	274.1	3,129.2	10.20	13.3	11.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	211.4	263.1	2,874.0	10.14	13.6	10.9	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	191.2	254.0	2,654.8	10.05	13.9	10.5	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	210.1	238.0	2,408.1	8.93	11.5	10.1	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	181.2	224.7	2,136.3	8.86	11.8	9.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	165.0	222.7	2,054.3	8.98	12.5	9.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	154.3	217.8	1,946.7	8.93	12.6	8.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	140.7	211.6	1,810.0	8.85	12.9	8.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	198.2	213.8	1,888.3	7.72	8.8	9.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	211.7	226.5	2,070.1	8.00	9.1	9.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	205.2	209.6	1,944.7	7.98	9.3	9.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	192.5	198.8	1,819.0	7.96	9.4	9.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	167.4	197.5	1,699.6	7.88	10.2	8.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	153.0	191.0	1,580.2	7.86	10.3	8.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	139.5	185.2	1,466.8	7.79	10.5	7.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	128.2	180.4	1,371.1	7.74	10.7	7.6	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	120.2	181.9	1,352.1	7.76	11.2	7.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	110.3	177.2	1,262.0	7.67	11.4	7.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	100.6	172.8	1,172.6	7.59	11.7	6.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	180.2	192.1	1,589.9	7.24	8.3	8.8	20.76	16.66	11.53	0.960	10.07
65 T	65.04	175.7	176.4	1,495.2	7.22	8.5	8.5	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	173.9	177.0	1,469.9	7.18	8.5	8.3	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	159.6	171.9	1,373.4	7.14	8.6	8.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	138.6	171.0	1,282.7	7.06	9.3	7.5	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	126.6	165.7	1,191.1	7.00	9.4	7.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	114.6	160.5	1,099.0	6.94	9.6	6.8	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	104.2	156.0	1,018.2	6.87	9.8	6.5	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	91.4	155.7	960.2	6.89	10.5	6.2	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	82.5	151.5	884.4	6.79	10.7	5.8	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	73.8	147.6	809.1	6.69	11.0	5.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	65.5	143.2	731.8	6.49	11.2	5.1	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	144.2	155.0	1,153.1	6.58	8.0	7.4	17.07	15.00	10.50	0.850	8.46
54 T	53.99	132.3	152.2	1,086.2	6.53	8.2	7.1	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	109.9	141.5	903.3	6.28	8.2	6.4	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	100.3	137.5	831.4	6.22	8.3	6.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	86.3	135.0	757.1	6.11	8.8	5.6	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	78.3	131.7	699.3	6.02	8.9	5.3	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	70.3	128.3	641.1	5.92	9.1	5.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	62.7	128.8	613.8	5.91	9.8	4.8	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	56.0	125.5	559.4	5.78	10.0	4.5	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	48.9	121.7	499.0	5.59	10.2	4.1	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	85.2	118.6	625.6	5.51	7.3	5.3	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	77.5	115.7	580.0	5.42	7.5	5.0	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	100.1	118.9	683.9	5.41	6.8	5.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	89.9	116.0	631.8	5.37	7.0	5.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	80.9	113.5	585.2	5.31	7.2	5.2	11.18	11.95	8.98	0.682	5.26



PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
12 x 8 x 50 I-T	33.81	72.2	116.1	561.9	5.36	7.8	4.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	65.1	113.1	516.7	5.28	7.9	4.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	58.3	110.4	472.1	5.19	8.1	4.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	52.6	110.5	451.9	5.17	8.6	4.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	45.4	107.0	399.3	5.01	8.8	3.7	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	39.6	103.9	354.8	4.84	9.0	3.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	31.3	101.3	304.9	4.58	9.7	3.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	26.9	97.5	265.6	4.37	9.9	2.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	22.7	93.0	226.9	4.11	10.0	2.4	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.3	90.1	196.3	3.90	10.2	2.2	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.1	87.3	169.2	3.70	10.5	1.9	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	70.0	99.4	454.1	4.73	6.5	4.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	65.5	98.1	432.2	4.70	6.6	4.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	59.5	96.3	402.0	4.64	6.8	4.2	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	55.3	93.7	367.0	4.48	6.6	3.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	47.7	90.3	323.9	4.35	6.8	3.6	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	39.9	86.7	278.3	4.17	7.0	3.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.0	88.6	272.7	4.20	7.6	3.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.0	85.8	239.4	4.04	7.7	2.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	25.6	81.8	201.4	3.80	7.9	2.5	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.2	82.3	193.4	3.75	8.3	2.4	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.3	79.3	170.6	3.57	8.4	2.2	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.6	76.2	149.3	3.39	8.5	2.0	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.6	72.2	117.6	3.10	8.7	1.6	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.5	69.1	95.2	2.85	9.1	1.4	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	60.3	83.0	329.7	4.07	5.5	4.0	10.28	9.00	8.75	0.751	3.94
32 T	31.96	55.6	81.6	310.0	4.04	5.6	3.8	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	51.0	82.4	301.1	4.04	5.9	3.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	46.9	81.2	282.1	3.99	6.0	3.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	42.7	79.8	262.6	3.94	6.1	3.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	59.4	75.2	285.4	3.68	4.8	3.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	54.5	73.8	267.1	3.65	4.9	3.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	49.6	72.4	248.3	3.62	5.0	3.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	45.2	71.1	231.4	3.57	5.1	3.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	38.9	71.5	215.9	3.57	5.5	3.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	35.1	70.1	198.8	3.50	5.7	2.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	31.6	68.9	182.6	3.44	5.8	2.7	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.1	67.1	165.8	3.33	5.9	2.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.2	69.1	170.3	3.37	6.0	2.5	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.2	66.8	148.5	3.23	6.1	2.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.3	66.1	133.3	3.13	6.6	2.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.0	63.2	113.1	2.94	6.6	1.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.8	61.7	102.4	2.82	6.9	1.7	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.6	58.9	87.6	2.65	6.9	1.5	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.8	56.2	69.8	2.43	7.1	1.2	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.3	50.5	47.3	2.06	7.5	0.9	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	26.8	59.7	138.7	3.02	5.2	2.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.0	58.7	126.9	2.95	5.3	2.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.8	57.1	112.5	2.83	5.4	2.0	4.41	6.93	6.73	0.383	1.87



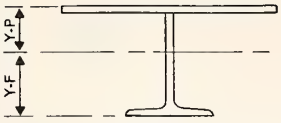
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 4 x 8.6 T	8.60	10.5	50.0	64.7	2.31	6.1	1.3	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.7	41.1	31.3	1.70	6.7	0.8	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.8	51.1	103.4	2.64	4.5	2.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.8	49.7	91.6	2.54	4.6	1.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.2	48.5	81.6	2.45	4.7	1.7	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	12.6	47.5	66.4	2.27	5.3	1.4	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.8	46.9	66.5	2.28	5.2	1.4	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.8	44.9	56.9	2.14	5.3	1.3	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.1	42.8	48.3	2.00	5.3	1.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.0	42.6	47.7	1.99	5.3	1.1	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.6	41.0	41.1	1.88	5.4	1.0	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	6.4	38.6	34.3	1.74	5.4	0.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.2	38.9	34.2	1.74	5.6	0.9	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.3	31.9	19.3	1.35	5.8	0.6	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.6	40.7	62.6	2.13	4.0	1.5	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.5	39.5	55.0	2.04	4.1	1.4	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.0	37.6	46.0	1.90	4.2	1.2	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.6	37.5	42.7	1.86	4.4	1.1	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.3	35.9	37.2	1.75	4.5	1.0	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.1	34.3	32.1	1.65	4.5	0.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.5	31.8	25.1	1.49	4.6	0.8	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.1	29.2	19.4	1.33	4.8	0.7	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.8	29.8	30.7	1.57	3.5	1.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.4	28.3	26.0	1.47	3.5	0.9	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.2	27.3	22.8	1.39	3.7	0.8	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.2	25.7	19.3	1.29	3.7	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.1	23.9	15.5	1.18	3.7	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	19.8	9.8	0.96	3.9	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	15.5	6.7	0.80	3.5	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.5	20.6	15.4	1.14	2.8	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.0	18.1	11.2	0.99	2.8	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.8	15.7	8.0	0.86	2.9	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.4	11.3	4.2	0.64	3.1	0.4	0.65	3.00	1.84	0.167	0.34



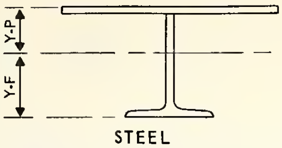
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

20.4# PLATE WEIGHT

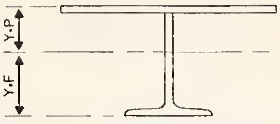
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 14 x 130 I-T	89.83	343.2	353.7	4,309.3	10.52	12.6	12.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	314.9	349.9	4,110.3	10.48	13.1	11.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	290.9	339.9	3,865.3	10.46	13.3	11.4	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	266.0	330.1	3,608.5	10.42	13.6	10.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	242.6	331.1	3,469.9	10.26	14.3	10.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	217.8	319.5	3,183.6	10.16	14.6	10.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	196.8	309.8	2,936.3	10.03	14.9	9.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	263.0	292.6	2,977.9	9.23	11.3	10.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	216.8	287.7	2,675.3	8.99	12.3	9.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	186.6	273.7	2,369.7	8.87	12.7	8.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	169.7	272.1	2,272.5	8.95	13.4	8.4	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	158.6	266.9	2,150.5	8.87	13.6	8.1	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	144.5	260.2	1,995.4	8.75	13.8	7.7	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	220.8	241.8	2,125.8	7.84	9.6	8.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	233.5	256.7	2,321.0	8.11	9.9	9.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	215.8	249.8	2,179.2	8.07	10.1	8.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	198.1	243.0	2,036.2	8.02	10.3	8.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	172.3	240.9	1,890.7	7.91	11.0	7.8	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	157.3	234.1	1,755.4	7.85	11.2	7.5	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	143.2	227.7	1,626.3	7.75	11.4	7.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	131.4	222.6	1,516.9	7.67	11.5	6.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	123.4	224.2	1,491.3	7.67	12.1	6.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	113.1	219.0	1,388.9	7.55	12.3	6.3	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	103.0	214.2	1,286.9	7.44	12.5	6.0	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	198.3	220.8	1,792.7	7.34	9.0	8.1	20.76	16.66	11.53	0.960	10.07
65 T	65.04	181.1	216.5	1,681.3	7.29	9.3	7.8	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	178.9	216.7	1,648.4	7.25	9.2	7.6	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	164.0	211.1	1,537.6	7.18	9.4	7.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	142.5	209.5	1,426.5	7.05	10.0	6.8	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	130.0	203.7	1,322.3	6.97	10.2	6.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	117.5	198.0	1,217.1	6.88	10.4	6.1	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	106.7	193.2	1,124.6	6.78	10.5	5.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	93.5	192.9	1,054.4	6.75	11.3	5.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	84.3	188.3	968.1	6.62	11.5	5.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	75.4	183.9	882.1	6.48	11.7	4.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	66.9	178.5	794.8	6.26	11.9	4.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	148.5	191.0	1,295.1	6.62	8.7	6.8	17.07	15.00	10.50	0.850	8.46
54 T	53.99	136.2	187.7	1,216.2	6.55	8.9	6.5	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	112.7	175.4	1,005.7	6.24	8.9	5.7	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	102.5	170.9	922.6	6.15	9.0	5.4	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	88.2	167.7	834.7	6.00	9.5	5.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	79.9	164.0	768.3	5.88	9.6	4.7	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	71.6	160.1	701.7	5.75	9.8	4.4	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	63.9	160.6	668.6	5.72	10.5	4.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	57.1	156.8	606.8	5.56	10.6	3.9	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	49.8	152.0	538.7	5.34	10.8	3.5	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	102.8	147.8	767.1	5.40	7.5	5.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	92.2	144.6	705.8	5.33	7.7	4.9	12.35	12.04	9.01	0.772	5.65



PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 9 x38 T	38.01	82.8	141.7	650.9	5.24	7.9	4.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x50 I-T	33.81	73.8	144.5	619.2	5.25	8.4	4.3	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	66.4	141.1	567.2	5.14	8.5	4.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	59.3	137.9	516.0	5.03	8.7	3.7	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x36 I-T	24.94	53.6	137.9	491.8	4.98	9.2	3.6	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.2	133.8	432.0	4.79	9.4	3.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.2	130.0	381.9	4.60	9.5	2.9	5.53	11.94	6.50	0.400	2.86
12 x 4 x22 I-T	16.80	31.9	126.0	325.7	4.32	10.2	2.6	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.3	121.2	282.4	4.10	10.3	2.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.1	115.3	240.3	3.83	10.4	2.1	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.6	111.5	206.8	3.62	10.5	1.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x11.8 I-T	9.34	16.3	107.7	177.4	3.41	10.9	1.6	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x36.5 T	36.48	71.7	124.2	505.3	4.66	7.1	4.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	67.0	122.7	479.6	4.62	7.2	3.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	60.8	120.4	444.2	4.53	7.3	3.7	9.12	10.49	8.24	0.615	4.19
10 x 8 x45 I-T	29.46	56.3	117.0	403.9	4.37	7.2	3.5	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.5	112.9	354.4	4.21	7.3	3.1	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.6	108.3	302.4	3.99	7.4	2.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x29 I-T	19.99	36.6	110.6	294.7	4.00	8.1	2.7	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.5	107.0	257.2	3.83	8.2	2.4	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.0	101.7	215.0	3.57	8.3	2.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x19 I-T	14.22	23.6	102.0	205.8	3.51	8.7	2.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.6	98.1	180.9	3.33	8.8	1.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.9	93.9	157.7	3.15	8.8	1.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.7	88.5	123.3	2.85	9.0	1.4	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x9 I-T	7.38	10.6	83.8	99.2	2.60	9.3	1.2	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x35 T	34.95	61.8	104.0	368.1	4.02	6.0	3.5	10.28	9.00	8.75	0.751	3.94
32 T	31.96	56.8	102.4	344.9	3.97	6.1	3.4	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x30 T	29.99	52.1	103.2	333.1	3.95	6.4	3.2	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	47.8	101.6	310.9	3.89	6.5	3.1	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.5	100.0	288.1	3.81	6.6	2.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x39 T	38.96	61.0	94.1	320.7	3.66	5.3	3.4	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	55.9	92.4	298.9	3.61	5.3	3.2	10.43	8.08	8.54	0.795	3.92
32 T	31.96	50.7	90.7	276.6	3.55	5.5	3.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	46.2	89.2	256.6	3.49	5.6	2.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x25 T	24.99	39.7	89.5	237.4	3.46	6.0	2.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	35.8	87.7	217.6	3.37	6.1	2.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.1	86.2	198.8	3.29	6.2	2.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.6	83.8	179.7	3.17	6.3	2.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x28 I-T	18.42	28.7	86.0	184.1	3.21	6.4	2.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.6	83.0	159.5	3.05	6.5	1.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x20 I-T	13.71	20.6	81.9	142.3	2.93	6.9	1.7	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.3	77.9	120.1	2.74	7.0	1.5	3.48	8.00	5.25	0.308	1.92
8 x 4 x15 I-T	11.11	15.1	75.7	108.4	2.62	7.2	1.4	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.8	71.8	92.3	2.45	7.2	1.3	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.0	67.9	73.0	2.23	7.3	1.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.4	59.6	49.0	1.87	7.7	0.8	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x19 T	19.01	27.3	74.5	151.0	2.89	5.5	2.0	5.59	7.06	6.78	0.513	2.20



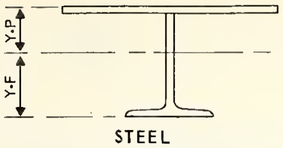
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 17 T	17.00	24.4	73.1	137.4	2.80	5.6	1.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.2	70.9	121.1	2.68	5.7	1.7	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.7	60.8	68.1	2.13	6.4	1.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.8	47.7	32.4	1.54	6.8	0.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.2	63.6	112.6	2.52	4.9	1.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.1	61.8	99.1	2.41	4.9	1.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.5	60.0	87.7	2.31	5.0	1.5	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.8	57.9	70.5	2.12	5.5	1.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.0	57.3	70.8	2.12	5.4	1.2	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.0	54.5	60.3	1.98	5.5	1.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.2	51.5	50.9	1.84	5.5	1.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.1	51.3	50.3	1.84	5.5	1.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.7	48.9	43.1	1.72	5.6	0.9	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.5	45.6	35.8	1.58	5.5	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.2	45.9	35.7	1.59	5.7	0.8	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.4	36.0	20.0	1.22	5.9	0.6	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.9	50.3	67.8	2.01	4.3	1.3	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.7	48.5	59.1	1.91	4.3	1.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.2	45.8	49.1	1.77	4.4	1.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.8	45.4	45.4	1.72	4.6	1.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.5	43.2	39.4	1.62	4.6	0.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.3	40.8	33.9	1.52	4.7	0.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.6	37.3	26.4	1.36	4.7	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.1	33.4	20.2	1.21	4.9	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.0	36.0	32.9	1.46	3.7	0.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.5	33.8	27.7	1.36	3.7	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.4	32.3	24.2	1.28	3.8	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.3	30.1	20.3	1.19	3.8	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.2	27.5	16.3	1.08	3.9	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	21.9	10.3	0.87	4.0	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.0	16.8	7.0	0.73	3.6	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.6	24.3	16.5	1.05	2.9	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.1	20.8	11.9	0.91	2.9	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.9	17.6	8.4	0.78	2.9	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.4	12.0	4.4	0.58	3.1	0.4	0.65	3.00	1.84	0.167	0.34

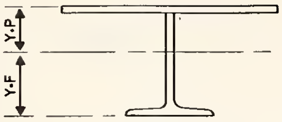


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
27 x 14 x 145 I-T	102.05	425.3	483.8	6,211.1	11.64	14.6	12.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	330.6	466.3	5,386.2	11.48	16.3	11.6	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	297.3	450.7	4,948.3	11.37	16.6	11.0	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	273.6	439.6	4,631.3	11.25	16.9	10.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	352.2	421.6	4,759.1	10.61	13.5	11.3	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	323.2	417.0	4,526.9	10.54	14.0	10.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	298.2	406.7	4,253.5	10.49	14.3	10.5	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	272.4	396.3	3,965.2	10.41	14.6	10.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	248.9	396.1	3,797.1	10.22	15.3	9.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	223.2	383.7	3,477.3	10.08	15.6	9.1	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	201.5	373.1	3,200.4	9.92	15.9	8.6	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	269.5	351.3	3,288.0	9.27	12.2	9.4	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	222.4	344.3	2,932.4	8.97	13.2	8.5	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	191.1	329.3	2,590.3	8.80	13.6	7.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	173.7	328.3	2,476.3	8.84	14.3	7.5	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	162.1	322.5	2,339.3	8.73	14.4	7.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	147.6	315.2	2,165.2	8.58	14.7	6.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	226.7	291.3	2,356.4	7.88	10.4	8.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	239.4	308.0	2,565.2	8.15	10.7	8.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	221.1	300.6	2,405.4	8.09	10.9	8.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	202.6	293.3	2,243.7	8.01	11.1	7.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	176.4	290.1	2,071.6	7.85	11.7	7.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	160.8	282.9	1,919.3	7.76	11.9	6.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	146.2	275.9	1,774.0	7.64	12.1	6.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	134.0	270.3	1,650.5	7.53	12.3	6.1	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	125.9	271.9	1,618.2	7.51	12.9	6.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	115.4	266.1	1,503.5	7.37	13.0	5.7	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	105.0	260.7	1,389.1	7.23	13.2	5.3	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	203.5	266.9	1,988.3	7.37	9.8	7.5	20.76	16.66	11.53	0.960	10.07
65 T	65.04	185.6	262.0	1,859.2	7.29	10.0	7.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	183.0	261.8	1,818.7	7.24	9.9	6.9	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	167.6	255.6	1,692.8	7.14	10.1	6.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	145.8	253.0	1,561.5	6.98	10.7	6.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	132.9	246.7	1,444.1	6.88	10.9	5.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	119.9	240.4	1,325.4	6.75	11.0	5.5	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	108.8	234.9	1,221.0	6.62	11.2	5.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	95.3	234.7	1,138.6	6.56	12.0	4.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	85.8	229.4	1,042.0	6.40	12.1	4.5	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	76.6	224.5	945.8	6.23	12.3	4.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	67.9	217.8	849.2	6.00	12.5	3.9	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	152.0	231.9	1,429.2	6.59	9.4	6.2	17.07	15.00	10.50	0.850	8.46
54 T	53.99	139.3	228.0	1,338.0	6.49	9.6	5.9	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	114.9	213.5	1,099.8	6.14	9.6	5.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	104.3	208.4	1,005.2	6.02	9.6	4.8	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	89.7	204.3	904.3	5.83	10.1	4.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	81.2	200.0	829.6	5.70	10.2	4.1	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	72.7	195.4	754.8	5.54	10.4	3.9	8.70	13.68	8.00	0.528	4.21



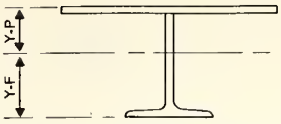
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 6 3/4 x 38 I-T	27.05	64.9	196.0	716.1	5.48	11.0	3.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	57.9	191.3	647.6	5.31	11.2	3.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	50.5	185.4	572.5	5.08	11.3	3.1	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	105.1	180.4	844.1	5.34	8.0	4.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	94.0	176.6	773.3	5.24	8.2	4.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	84.4	173.2	710.1	5.13	8.4	4.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	75.0	176.2	670.3	5.10	8.9	3.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	67.5	172.1	611.8	4.97	9.1	3.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	60.2	168.4	554.2	4.83	9.2	3.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	54.4	168.2	526.3	4.76	9.7	3.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.8	163.1	459.9	4.56	9.8	2.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.7	158.2	404.7	4.35	9.9	2.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.3	152.7	343.1	4.06	10.6	2.2	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.7	146.5	296.4	3.83	10.7	2.0	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.4	138.8	251.3	3.57	10.8	1.8	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.8	133.6	215.4	3.35	10.9	1.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.5	128.5	184.0	3.15	11.1	1.4	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	73.1	151.8	551.5	4.56	7.5	3.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	68.2	150.0	521.9	4.49	7.7	3.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	61.9	147.3	481.6	4.39	7.8	3.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	57.2	142.8	436.4	4.22	7.6	3.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	49.3	137.7	381.0	4.04	7.7	2.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	41.2	131.8	323.1	3.81	7.9	2.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.1	134.3	313.4	3.80	8.4	2.3	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.9	129.7	272.2	3.61	8.5	2.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.3	122.8	226.5	3.35	8.6	1.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.9	122.8	216.2	3.29	9.0	1.8	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.9	117.7	189.4	3.11	9.1	1.6	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.1	112.2	164.7	2.93	9.1	1.5	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.9	104.7	127.9	2.63	9.2	1.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.8	98.0	102.5	2.38	9.5	1.0	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	53.0	126.1	361.5	3.83	6.8	2.9	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	48.6	124.1	336.2	3.75	6.9	2.7	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.2	122.0	310.4	3.66	7.0	2.5	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	62.4	115.1	352.9	3.59	5.7	3.1	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	57.0	113.1	327.7	3.53	5.7	2.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	51.7	111.0	302.0	3.46	5.8	2.7	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.0	109.0	278.9	3.38	5.9	2.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.4	109.1	256.2	3.32	6.3	2.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.3	106.8	233.8	3.23	6.4	2.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.6	104.7	212.7	3.13	6.5	2.0	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.0	101.6	191.6	3.00	6.6	1.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.1	104.1	196.0	3.04	6.7	1.9	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.9	100.1	168.9	2.87	6.8	1.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.9	98.2	149.8	2.75	7.2	1.5	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.5	92.9	125.9	2.55	7.2	1.4	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.3	89.9	113.4	2.44	7.4	1.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.0	84.7	96.3	2.27	7.4	1.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.1	79.0	75.7	2.05	7.5	1.0	2.19	7.90	3.94	0.204	1.34



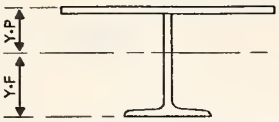
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
8 x 2 1/4 x 6.5 I-T	5.19	6.5	67.7	50.5	1.71	7.8	0.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	27.7	90.3	161.6	2.75	5.8	1.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.8	88.4	146.4	2.65	5.9	1.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.5	85.3	128.4	2.52	6.0	1.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.8	71.2	71.1	1.97	6.6	1.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.8	53.1	33.4	1.40	6.9	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.6	76.9	120.6	2.39	5.1	1.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.4	74.3	105.6	2.27	5.2	1.4	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.7	71.8	93.0	2.17	5.2	1.3	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.0	68.3	74.1	1.97	5.7	1.1	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.2	67.7	74.4	1.97	5.6	1.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.2	63.9	63.2	1.84	5.7	1.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.4	59.8	53.2	1.70	5.7	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.2	59.5	52.5	1.70	5.7	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.8	56.2	44.9	1.58	5.7	0.8	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.6	51.8	37.2	1.45	5.7	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.3	52.0	37.1	1.45	5.9	0.7	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.4	39.1	20.7	1.11	6.0	0.5	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	16.2	60.0	72.2	1.89	4.5	1.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.9	57.5	62.7	1.79	4.5	1.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.4	53.8	51.8	1.65	4.5	1.0	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.0	52.9	47.7	1.60	4.8	0.9	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.6	49.9	41.3	1.50	4.8	0.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.4	46.7	35.4	1.40	4.8	0.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.7	41.9	27.5	1.25	4.8	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.2	36.9	21.0	1.11	5.0	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.2	41.8	34.8	1.36	3.8	0.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.7	38.9	29.2	1.26	3.8	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.5	36.8	25.5	1.19	3.9	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.4	33.8	21.3	1.10	3.9	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.3	30.4	17.1	0.99	4.0	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.6	23.4	10.7	0.80	4.1	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.0	17.7	7.4	0.67	3.6	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.7	27.5	17.5	0.98	3.1	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.2	23.1	12.6	0.84	3.0	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.0	19.0	8.9	0.72	3.0	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.5	12.5	4.7	0.53	3.2	0.4	0.65	3.00	1.84	0.167	0.34



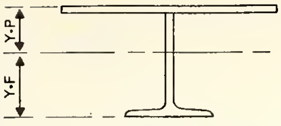
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
30 x 10 1/2 x 132 I-T	99.55	424.2	629.1	7,835.5	12.67	18.5	12.5	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	398.6	616.7	7,453.8	12.59	18.7	12.1	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	371.9	603.6	7,047.7	12.45	18.9	11.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	343.4	589.3	6,605.6	12.27	19.2	11.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	434.9	565.7	6,763.3	11.68	15.6	12.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	338.1	546.4	5,828.2	11.44	17.2	10.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	303.7	529.9	5,344.9	11.29	17.6	10.1	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	279.3	518.0	4,994.7	11.14	17.9	9.6	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	359.6	495.7	5,182.2	10.62	14.4	10.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	330.0	490.4	4,916.7	10.52	14.9	10.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	304.2	479.6	4,613.4	10.44	15.2	9.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	277.6	468.5	4,292.6	10.33	15.5	9.2	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	254.0	466.8	4,097.2	10.12	16.1	8.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	227.6	453.6	3,743.6	9.94	16.5	8.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	205.3	441.8	3,437.5	9.74	16.7	7.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	274.7	415.2	3,575.4	9.23	13.0	8.6	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	227.1	405.8	3,168.7	8.88	14.0	7.8	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	194.7	389.7	2,789.8	8.67	14.3	7.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	176.8	389.1	2,658.5	8.67	15.0	6.8	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	165.0	382.8	2,507.0	8.54	15.2	6.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	150.1	374.6	2,314.7	8.37	15.4	6.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	231.5	345.2	2,570.0	7.86	11.1	7.4	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	244.3	363.8	2,792.2	8.13	11.4	7.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	225.3	355.8	2,613.7	8.04	11.6	7.3	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	206.4	347.8	2,433.0	7.93	11.8	7.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	179.8	343.5	2,235.6	7.74	12.4	6.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	163.6	335.6	2,066.3	7.62	12.6	6.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	148.6	328.0	1,905.1	7.48	12.8	5.8	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	136.1	321.7	1,768.0	7.34	13.0	5.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	128.0	323.2	1,729.6	7.31	13.5	5.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	117.2	316.7	1,603.2	7.15	13.7	5.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	106.5	310.5	1,477.2	6.98	13.9	4.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	207.7	316.9	2,168.5	7.34	10.4	6.8	20.76	16.66	11.53	0.960	10.07
65 T	65.04	189.3	311.3	2,021.8	7.23	10.7	6.5	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	186.4	310.8	1,974.2	7.17	10.6	6.4	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	170.5	303.8	1,833.3	7.05	10.8	6.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	148.5	300.0	1,682.8	6.87	11.3	5.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	135.2	293.0	1,552.5	6.73	11.5	5.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	121.9	286.0	1,420.7	6.59	11.7	5.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	110.4	279.7	1,305.2	6.43	11.8	4.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	96.7	279.4	1,211.2	6.33	12.5	4.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	87.0	273.3	1,105.2	6.16	12.7	4.0	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	77.6	267.5	999.6	5.97	12.9	3.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	68.8	259.4	894.9	5.72	13.0	3.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	154.9	276.1	1,550.5	6.51	10.0	5.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	141.9	271.4	1,447.3	6.39	10.2	5.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	116.7	254.5	1,182.8	6.00	10.1	4.6	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	105.7	248.6	1,077.4	5.85	10.2	4.3	11.92	13.90	10.00	0.643	5.25



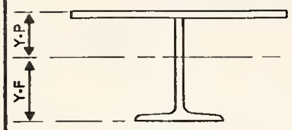
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53 I-T	36.44	91.0	243.4	964.5	5.65	10.6	4.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	82.3	238.2	882.0	5.49	10.7	3.7	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	73.6	232.8	799.9	5.32	10.9	3.4	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	65.7	233.2	756.1	5.24	11.5	3.2	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	58.6	227.5	681.6	5.05	11.6	3.0	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	51.1	220.2	600.6	4.81	11.8	2.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	106.9	215.4	912.4	5.23	8.5	4.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	95.5	210.9	832.6	5.11	8.7	3.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	85.7	206.7	761.7	4.98	8.9	3.7	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	76.0	209.7	714.2	4.92	9.4	3.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	68.3	204.9	649.8	4.78	9.5	3.2	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	60.8	200.3	586.5	4.62	9.6	2.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	55.0	199.9	555.3	4.55	10.1	2.8	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	47.3	193.6	483.1	4.32	10.2	2.5	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	41.1	187.4	423.6	4.11	10.3	2.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	32.7	179.7	357.4	3.82	10.9	2.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.0	171.9	307.9	3.59	11.0	1.8	4.34	12.16	4.01	0.349	2.91
16.5I-T	13.11	23.6	162.2	260.3	3.34	11.0	1.6	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	20.1	155.3	222.4	3.12	11.1	1.4	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	74.2	181.1	591.7	4.42	8.0	3.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	69.2	178.9	558.5	4.35	8.1	3.1	10.01	10.57	8.27	0.685	4.54
31 T	31.01	62.7	175.5	513.6	4.23	8.2	2.9	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	58.0	169.8	464.2	4.06	8.0	2.7	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	49.8	163.4	403.5	3.86	8.1	2.5	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	41.6	156.0	340.5	3.62	8.2	2.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.5	158.6	329.1	3.60	8.8	2.1	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	32.2	152.8	284.6	3.40	8.8	1.9	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	26.5	143.9	235.9	3.14	8.9	1.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	24.2	143.4	224.7	3.08	9.3	1.6	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	21.1	136.8	196.5	2.90	9.3	1.4	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	18.3	129.9	170.5	2.73	9.3	1.3	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	14.0	119.8	131.8	2.44	9.4	1.1	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	53.8	150.0	385.9	3.69	7.2	2.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	49.3	147.5	357.8	3.60	7.3	2.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.8	144.8	329.3	3.50	7.4	2.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	63.4	137.3	381.2	3.51	6.0	2.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	58.0	134.8	352.8	3.43	6.1	2.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	52.5	132.1	323.9	3.35	6.2	2.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.7	129.6	298.2	3.26	6.3	2.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.9	129.3	272.1	3.18	6.7	2.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.8	126.4	247.5	3.08	6.7	2.0	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.9	123.6	224.3	2.97	6.8	1.8	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.3	119.5	201.5	2.84	6.9	1.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	29.4	122.3	205.9	2.87	7.0	1.7	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	25.1	117.1	176.8	2.70	7.0	1.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	21.1	114.2	156.1	2.57	7.4	1.4	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	17.7	107.3	130.8	2.38	7.4	1.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	15.5	103.3	117.5	2.27	7.6	1.1	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	13.1	96.6	99.6	2.11	7.6	1.0	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	10.2	88.9	78.0	1.89	7.6	0.9	2.19	7.90	3.94	0.204	1.34



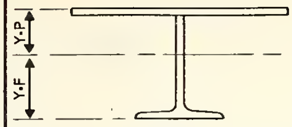
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 19 T	19.01	28.1	106.2	170.5	2.61	6.1	1.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.1	103.5	153.9	2.50	6.1	1.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.7	99.4	134.6	2.37	6.2	1.4	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.0	80.6	73.6	1.83	6.7	0.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.9	57.2	34.4	1.29	7.0	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.9	90.0	127.3	2.26	5.3	1.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.6	86.5	111.0	2.15	5.4	1.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.9	83.1	97.4	2.04	5.4	1.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	13.1	77.8	77.1	1.84	5.9	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.4	77.4	77.5	1.84	5.8	1.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.3	72.4	65.6	1.71	5.8	0.9	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.5	67.1	55.1	1.58	5.8	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.4	66.7	54.4	1.57	5.8	0.8	2.43	6.00	4.00	0.269	1.38
6 x 4 x 7 T	7.04	8.0	62.3	46.4	1.47	5.8	0.7	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	6.7	56.8	38.4	1.34	5.8	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.4	57.0	38.3	1.34	6.0	0.7	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.4	69.3	76.0	1.79	4.6	1.1	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.1	65.9	65.7	1.68	4.7	1.0	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.6	61.0	54.2	1.55	4.7	0.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.1	59.6	49.8	1.49	4.9	0.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.7	55.8	43.0	1.40	4.9	0.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.5	51.8	36.8	1.30	4.9	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.8	45.7	28.5	1.16	4.9	0.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.3	39.5	21.8	1.02	5.1	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.3	47.0	36.5	1.28	3.9	0.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.8	43.3	30.6	1.18	3.9	0.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.6	40.5	26.6	1.11	4.0	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.5	36.8	22.3	1.02	4.0	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.4	32.6	17.8	0.92	4.0	0.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.7	24.4	11.2	0.74	4.2	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.1	18.4	7.8	0.62	3.7	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.9	30.2	18.5	0.92	3.1	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.3	24.9	13.3	0.79	3.1	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.1	20.1	9.4	0.67	3.1	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.6	12.9	5.1	0.50	3.2	0.4	0.65	3.00	1.84	0.167	0.34



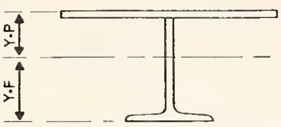
3 **STEEL**

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FODT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 I-T	99.55	433.0	728.2	8,414.5	12.61	19.4	11.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	406.7	715.0	7,997.2	12.50	19.7	11.2	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	379.3	700.9	7,553.0	12.34	19.9	10.8	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	350.2	685.1	7,069.5	12.13	20.2	10.3	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	443.3	656.9	7,296.9	11.66	16.5	11.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	344.6	635.3	6,248.2	11.33	18.1	9.8	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	309.2	617.8	5,718.1	11.14	18.5	9.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	284.2	604.7	5,334.1	10.96	18.8	8.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	366.0	578.0	5,586.7	10.56	15.3	9.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	335.9	571.7	5,287.3	10.43	15.7	9.2	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	309.4	560.3	4,952.7	10.32	16.0	8.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	282.0	548.5	4,598.5	10.18	16.3	8.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	258.4	545.1	4,377.4	9.96	16.9	8.0	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	231.3	530.7	3,989.7	9.75	17.3	7.5	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	208.5	517.7	3,654.8	9.51	17.5	7.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	279.2	486.0	3,846.2	9.13	13.8	7.9	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	231.0	473.7	3,389.8	8.75	14.7	7.2	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	197.9	456.2	2,973.7	8.49	15.0	6.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	179.5	456.0	2,824.9	8.45	15.7	6.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	167.4	448.9	2,659.1	8.31	15.9	5.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	152.1	439.7	2,449.2	8.11	16.1	5.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	235.7	404.7	2,771.4	7.78	11.8	6.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	248.5	425.5	3,006.7	8.05	12.1	7.1	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	229.0	416.8	2,809.2	7.94	12.3	6.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	209.5	408.0	2,609.1	7.81	12.5	6.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	182.6	402.2	2,387.1	7.59	13.1	5.9	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	166.0	393.6	2,200.9	7.45	13.3	5.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	150.7	385.0	2,024.1	7.28	13.4	5.3	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	137.9	377.8	1,873.9	7.12	13.6	5.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	129.7	379.3	1,829.6	7.08	14.1	4.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	118.7	371.8	1,692.2	6.90	14.3	4.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	107.8	364.7	1,555.2	6.72	14.4	4.3	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	211.2	372.2	2,337.5	7.25	11.1	6.3	20.76	16.66	11.53	0.960	10.07
65 T	65.04	192.4	365.7	2,173.2	7.13	11.3	5.9	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	189.2	364.6	2,118.9	7.06	11.2	5.8	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	173.0	356.8	1,963.1	6.92	11.3	5.5	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	150.7	351.5	1,794.2	6.71	11.9	5.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	137.1	343.6	1,651.2	6.56	12.0	4.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	123.5	335.6	1,506.8	6.39	12.2	4.5	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	111.8	328.4	1,380.5	6.22	12.3	4.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	97.9	327.8	1,275.7	6.10	13.0	3.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	88.0	320.6	1,160.8	5.91	13.2	3.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	78.4	313.7	1,046.7	5.70	13.4	3.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	69.5	303.7	934.7	5.45	13.5	3.1	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	157.4	324.5	1,662.4	6.39	10.6	5.1	17.07	15.00	10.50	0.850	8.46
54 T	53.99	144.0	319.0	1,547.6	6.26	10.7	4.9	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	118.2	299.1	1,257.9	5.83	10.6	4.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	106.9	292.2	1,142.1	5.66	10.7	3.9	11.92	13.90	10.00	0.643	5.25



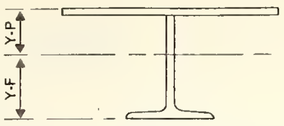
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

50t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
14 x 8 x 53 I-T	36.44	92.0	285.6	1,018.1	5.44	11.1	3.6	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	83.2	279.4	928.4	5.28	11.2	3.3	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	74.4	272.8	839.5	5.09	11.3	3.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	66.4	272.9	791.1	5.00	11.9	2.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	59.2	265.9	711.2	4.80	12.0	2.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	51.6	256.7	624.8	4.56	12.1	2.4	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	108.4	253.4	974.6	5.10	9.0	3.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	96.8	248.0	886.0	4.96	9.2	3.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	86.8	242.9	807.9	4.82	9.3	3.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	76.8	245.7	753.3	4.73	9.8	3.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	69.0	239.9	683.3	4.58	9.9	2.8	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	61.4	234.3	614.7	4.41	10.0	2.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	55.6	233.4	580.5	4.33	10.4	2.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	47.8	225.4	503.2	4.10	10.5	2.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	41.5	217.5	439.8	3.88	10.6	2.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	33.0	207.4	369.8	3.60	11.2	1.8	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.3	197.4	317.8	3.37	11.2	1.6	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.9	185.3	268.1	3.12	11.2	1.4	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.2	176.3	228.5	2.91	11.3	1.3	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	75.1	212.5	627.6	4.27	8.4	3.0	10.73	10.62	8.29	0.740	4.83
34 T	34.03	70.0	209.8	591.1	4.19	8.4	2.8	10.01	10.57	8.27	0.685	4.54
31 T	31.01	63.5	205.5	542.0	4.07	8.5	2.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	58.6	198.3	488.8	3.89	8.3	2.5	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	50.4	190.5	423.3	3.68	8.4	2.2	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	42.0	181.1	355.7	3.44	8.5	2.0	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.9	183.7	342.7	3.41	9.0	1.9	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.5	176.1	295.4	3.21	9.1	1.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.8	164.9	244.1	2.95	9.1	1.5	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.4	163.8	232.1	2.89	9.5	1.4	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.3	155.6	202.6	2.72	9.5	1.3	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.5	146.9	175.6	2.55	9.5	1.2	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.2	133.8	135.3	2.27	9.5	1.0	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	54.5	175.3	407.6	3.54	7.5	2.3	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	49.9	172.1	376.9	3.45	7.6	2.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	45.3	168.6	345.9	3.34	7.6	2.1	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	64.4	161.0	406.9	3.40	6.3	2.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	58.8	157.8	375.5	3.32	6.4	2.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	53.1	154.4	343.5	3.22	6.5	2.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	48.3	151.3	315.3	3.13	6.5	2.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	41.4	150.3	286.2	3.04	6.9	1.9	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	37.2	146.5	259.6	2.93	7.0	1.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.3	142.8	234.6	2.82	7.0	1.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.7	137.6	210.3	2.69	7.1	1.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.7	140.6	214.6	2.72	7.2	1.5	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.4	133.9	183.6	2.55	7.2	1.4	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.3	129.8	161.7	2.42	7.6	1.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.8	121.0	135.1	2.23	7.6	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.6	115.8	121.3	2.12	7.8	1.0	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.3	107.6	102.6	1.97	7.7	1.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.3	97.6	80.1	1.76	7.8	0.8	2.19	7.90	3.94	0.204	1.34



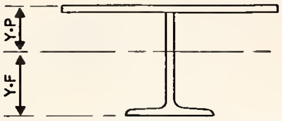
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	28.4	122.1	178.4	2.47	6.3	1.5	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.4	118.6	160.6	2.37	6.3	1.4	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.9	113.2	140.0	2.23	6.4	1.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.1	89.0	75.9	1.70	6.8	0.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	5.0	60.2	35.3	1.19	7.1	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	24.2	103.0	133.3	2.15	5.5	1.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.9	98.4	115.9	2.03	5.5	1.2	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.2	93.9	101.4	1.92	5.6	1.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	13.3	86.6	79.9	1.72	6.0	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.6	86.3	80.3	1.73	5.9	0.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.5	80.0	67.9	1.60	5.9	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.6	73.4	57.0	1.48	5.9	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.5	73.0	56.3	1.47	5.9	0.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.1	67.6	47.9	1.36	5.9	0.7	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.8	60.9	39.7	1.25	5.9	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.5	61.1	39.5	1.25	6.0	0.6	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.6	78.1	79.5	1.69	4.8	1.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.3	73.7	68.6	1.58	4.8	0.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.7	67.6	56.4	1.45	4.8	0.8	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.3	65.6	51.7	1.40	5.0	0.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.9	60.8	44.6	1.31	5.0	0.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.6	56.0	38.2	1.21	5.0	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.9	48.7	29.5	1.08	5.0	0.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.4	41.4	22.6	0.95	5.1	0.5	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.5	51.6	38.2	1.20	4.0	0.7	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	8.0	47.0	31.9	1.10	4.0	0.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.7	43.6	27.7	1.04	4.1	0.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.7	39.3	23.2	0.95	4.1	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.5	34.4	18.6	0.86	4.1	0.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.8	25.2	11.8	0.69	4.2	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.2	18.9	8.3	0.58	3.8	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	6.0	32.5	19.5	0.86	3.2	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.4	26.4	14.0	0.74	3.2	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.2	21.0	10.0	0.63	3.1	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.7	13.3	5.5	0.47	3.3	0.4	0.65	3.00	1.84	0.167	0.34



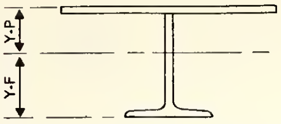
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 1-T	99.55	440.5	834.0	8,950.0	12.49	20.3	10.7	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	413.5	820.0	8,497.1	12.36	20.5	10.4	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	385.6	804.6	8,015.5	12.18	20.8	10.0	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	355.9	787.2	7,491.9	11.95	21.1	9.5	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	450.4	754.4	7,791.7	11.58	17.3	10.3	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	350.0	730.1	6,631.8	11.17	18.9	9.1	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	313.8	711.2	6,055.6	10.95	19.3	8.5	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	288.3	697.0	5,639.2	10.74	19.6	8.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	371.4	665.7	5,957.9	10.45	16.0	8.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	340.8	658.4	5,625.7	10.30	16.5	8.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	313.7	646.3	5,260.2	10.16	16.8	8.1	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	285.7	633.4	4,873.6	9.99	17.1	7.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	262.1	628.2	4,629.3	9.76	17.7	7.4	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	234.4	612.4	4,208.8	9.52	18.0	6.9	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	211.2	597.9	3,846.9	9.26	18.2	6.4	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	283.0	561.2	4,091.6	9.00	14.5	7.3	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	234.4	545.7	3,589.0	8.58	15.3	6.6	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	200.5	526.5	3,137.3	8.28	15.7	6.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	181.8	526.5	2,971.6	8.22	16.3	5.6	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	169.4	518.6	2,792.6	8.06	16.5	5.4	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	153.9	508.0	2,566.6	7.85	16.7	5.1	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	239.1	467.8	2,954.0	7.67	12.4	6.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	252.0	490.9	3,201.7	7.93	12.7	6.5	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	232.0	481.3	2,985.6	7.80	12.9	6.2	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	212.2	471.6	2,767.0	7.65	13.0	5.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	185.0	464.1	2,522.2	7.41	13.6	5.4	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	168.0	454.6	2,320.0	7.25	13.8	5.1	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	152.4	444.8	2,128.6	7.06	14.0	4.8	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	139.4	436.6	1,966.2	6.89	14.1	4.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	131.2	437.9	1,916.7	6.84	14.6	4.4	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	120.0	429.2	1,769.3	6.65	14.7	4.1	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	108.9	420.9	1,622.3	6.46	14.9	3.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	214.2	430.6	2,490.2	7.14	11.6	5.8	20.76	16.66	11.53	0.960	10.07
65 T	65.04	195.0	423.1	2,309.0	6.99	11.8	5.5	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 1-T	64.24	191.6	421.4	2,248.6	6.92	11.7	5.3	18.89	16.32	11.53	0.875	8.73
88 1-T	59.02	175.1	412.5	2,078.6	6.76	11.9	5.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	152.6	405.6	1,893.0	6.54	12.4	4.7	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	138.7	396.6	1,738.1	6.37	12.5	4.4	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	124.9	387.4	1,582.0	6.18	12.7	4.1	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	113.0	379.1	1,445.9	6.00	12.8	3.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	98.9	377.8	1,331.2	5.86	13.5	3.5	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	88.9	369.3	1,208.4	5.66	13.6	3.3	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	79.1	361.0	1,086.7	5.45	13.7	3.0	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	70.1	348.9	968.4	5.19	13.8	2.8	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	159.4	375.4	1,762.1	6.24	11.1	4.7	17.07	15.00	10.50	0.850	8.46
54 T	53.99	145.8	368.9	1,636.5	6.10	11.2	4.4	15.88	14.91	10.48	0.760	8.17

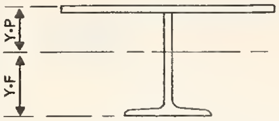


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 10 x 68 1-T	45.24	119.5	345.5	1,323.6	5.65	11.1	3.8	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	108.0	337.4	1,198.3	5.47	11.1	3.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	92.9	329.1	1,064.4	5.23	11.5	3.2	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	83.9	321.6	968.3	5.06	11.5	3.0	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	75.0	313.6	873.4	4.87	11.6	2.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	67.0	313.3	820.9	4.77	12.2	2.6	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	59.7	304.6	736.3	4.57	12.3	2.4	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	52.0	293.3	645.3	4.32	12.4	2.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	109.7	292.8	1,029.3	4.95	9.4	3.5	13.81	12.15	9.06	0.872	6.26
42 T	41.99	97.8	286.4	932.8	4.80	9.5	3.3	12.35	12.04	9.01	0.772	5.65
38 T	38.01	87.7	280.1	848.1	4.65	9.7	3.0	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	77.6	282.5	787.0	4.55	10.1	2.8	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	69.7	275.4	712.2	4.38	10.2	2.6	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	62.0	268.5	638.9	4.21	10.3	2.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	56.1	267.0	602.1	4.12	10.7	2.3	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	48.2	257.0	520.3	3.89	10.8	2.0	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	41.8	247.1	453.6	3.67	10.9	1.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	33.3	234.1	380.3	3.39	11.4	1.6	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	28.5	221.8	326.2	3.17	11.4	1.5	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	24.1	207.0	274.8	2.93	11.4	1.3	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	20.4	195.6	233.8	2.73	11.5	1.2	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	75.9	244.6	658.9	4.12	8.7	2.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	70.8	241.2	619.5	4.03	8.8	2.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	64.1	236.0	566.6	3.90	8.8	2.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	59.1	227.1	510.1	3.72	8.6	2.2	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	50.8	217.4	440.3	3.51	8.7	2.0	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	42.4	205.7	368.8	3.27	8.7	1.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	38.2	208.2	354.3	3.23	9.3	1.7	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	32.8	198.7	304.7	3.03	9.3	1.5	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	27.0	184.8	251.1	2.78	9.3	1.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	24.6	183.0	238.6	2.72	9.7	1.3	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	21.5	172.9	208.0	2.55	9.7	1.2	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	18.7	162.3	180.0	2.39	9.6	1.1	3.40	10.00	4.00	0.269	2.30
11.5 1-T	8.93	14.3	145.9	138.4	2.12	9.7	0.9	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	55.0	200.8	426.4	3.40	7.7	2.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	50.4	196.7	393.4	3.30	7.8	2.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	45.7	192.2	360.2	3.19	7.9	1.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	65.2	185.0	429.6	3.29	6.6	2.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	59.5	181.1	395.3	3.20	6.6	2.2	10.43	8.08	8.54	0.795	3.92
32 T	31.96	53.8	176.9	360.7	3.10	6.7	2.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	48.8	172.8	330.2	3.00	6.8	1.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	41.8	171.0	298.5	2.90	7.1	1.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	37.6	166.1	270.1	2.79	7.2	1.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.6	161.4	243.5	2.68	7.2	1.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	30.0	154.9	217.9	2.55	7.3	1.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	30.0	158.1	222.2	2.57	7.4	1.4	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	25.6	149.7	189.6	2.41	7.4	1.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	21.5	144.1	166.5	2.28	7.7	1.2	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	18.0	133.4	138.9	2.10	7.7	1.0	3.48	8.00	5.25	0.308	1.92



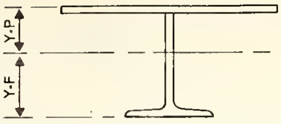
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 15 1-T	11.11	15.8	127.0	124.6	1.99	7.9	1.0	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	13.4	117.0	105.3	1.84	7.8	0.9	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	10.4	104.7	82.1	1.65	7.9	0.8	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	28.7	137.4	185.3	2.34	6.5	1.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.6	132.7	166.5	2.24	6.5	1.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.2	126.0	144.8	2.11	6.5	1.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.2	96.1	78.0	1.60	6.9	0.8	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	5.1	62.3	36.3	1.11	7.2	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	24.5	115.2	138.6	2.04	5.7	1.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.1	109.3	120.2	1.92	5.7	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.4	103.7	105.0	1.81	5.7	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	13.5	94.3	82.4	1.62	6.1	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.8	94.0	82.9	1.63	6.0	0.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.6	86.5	70.0	1.50	6.0	0.8	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.8	78.6	58.7	1.38	6.0	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.7	78.1	58.0	1.38	6.0	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.2	71.7	49.4	1.28	6.0	0.7	2.07	5.96	3.97	0.224	1.19
8.5 1-T	6.03	6.9	64.0	40.9	1.17	5.9	0.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.6	64.1	40.7	1.17	6.1	0.6	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.9	86.1	82.6	1.60	4.9	1.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.5	80.6	71.1	1.50	4.9	0.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.9	73.2	58.4	1.37	4.9	0.8	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.4	70.6	53.5	1.31	5.1	0.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	9.0	65.0	46.1	1.23	5.1	0.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.8	59.4	39.5	1.14	5.1	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	6.0	50.9	30.5	1.01	5.1	0.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.5	42.8	23.4	0.89	5.2	0.5	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.7	55.4	39.8	1.13	4.1	0.7	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	8.1	50.1	33.2	1.04	4.1	0.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.9	46.1	28.9	0.98	4.2	0.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.8	41.2	24.2	0.90	4.2	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.7	35.7	19.4	0.81	4.2	0.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.9	25.8	12.4	0.65	4.3	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.3	19.4	8.8	0.55	3.8	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	6.2	34.4	20.5	0.82	3.3	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.6	27.7	14.8	0.70	3.2	0.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.3	21.8	10.7	0.60	3.2	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.8	13.8	6.0	0.46	3.3	0.4	0.65	3.00	1.84	0.167	0.34



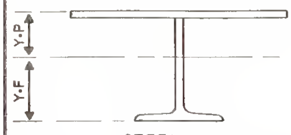
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
33 x 15 3/4 x 240 I-T	170.91	898.5	1,329.0	18,427.5	14.43	20.5	13.9	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	825.8	1,296.9	17,211.8	14.27	20.8	13.3	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	751.7	1,269.2	15,992.1	14.10	21.3	12.6	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	571.0	1,217.3	13,361.8	13.63	23.4	11.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	532.4	1,192.4	12,578.7	13.44	23.6	10.5	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	483.9	1,166.9	11,621.9	13.13	24.0	10.0	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	598.5	1,113.1	11,970.4	12.71	20.0	10.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	452.7	1,070.7	9,918.7	12.12	21.9	9.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	424.6	1,054.5	9,395.4	11.95	22.1	8.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	395.7	1,036.1	8,841.0	11.73	22.3	8.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	365.1	1,014.6	8,241.0	11.47	22.6	8.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	461.8	972.2	8,689.9	11.28	18.8	8.9	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	358.9	940.9	7,314.5	10.75	20.4	7.8	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	321.3	918.7	6,649.3	10.47	20.7	7.2	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	294.9	901.2	6,171.5	10.23	20.9	6.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	380.1	861.1	6,623.1	10.12	17.4	7.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	348.8	851.0	6,228.5	9.93	17.9	7.3	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	320.6	836.8	5,802.8	9.75	18.1	6.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	291.7	821.3	5,354.1	9.53	18.4	6.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	268.1	811.7	5,069.0	9.29	18.9	6.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	239.4	792.3	4,587.3	9.00	19.2	5.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	215.5	773.7	4,175.7	8.71	19.4	5.4	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	289.0	727.5	4,524.8	8.63	15.7	6.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	239.8	704.2	3,938.0	8.18	16.4	5.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	204.7	680.2	3,419.5	7.82	16.7	5.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	185.4	680.3	3,222.3	7.71	17.4	4.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	172.7	669.9	3,019.4	7.54	17.5	4.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	156.7	655.9	2,764.3	7.30	17.6	4.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	244.6	606.7	3,276.8	7.37	13.4	5.4	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	257.6	635.1	3,547.4	7.62	13.8	5.6	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	237.0	623.2	3,295.7	7.46	13.9	5.3	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	216.4	610.9	3,042.0	7.28	14.1	5.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	188.8	599.2	2,756.0	7.01	14.6	4.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	171.3	587.0	2,524.1	6.82	14.7	4.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	155.2	574.1	2,306.4	6.61	14.9	4.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	141.8	563.1	2,122.2	6.41	15.0	3.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	133.5	563.8	2,063.6	6.35	15.5	3.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	122.0	551.9	1,898.4	6.15	15.6	3.4	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	110.7	540.2	1,734.1	5.95	15.7	3.2	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	219.0	558.7	2,758.7	6.84	12.6	4.9	20.76	16.66	11.53	0.960	10.07
65 T	65.04	199.2	548.5	2,546.1	6.66	12.8	4.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	195.5	545.3	2,474.9	6.58	12.7	4.5	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	178.5	533.6	2,278.6	6.40	12.8	4.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	155.7	522.6	2,063.0	6.16	13.2	3.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	141.4	510.7	1,886.5	5.97	13.3	3.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	127.2	498.3	1,709.5	5.76	13.4	3.4	13.23	16.00	8.50	0.715	7.08



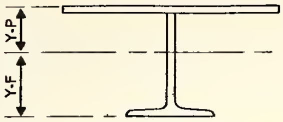
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
16 x 8 1/2 x 58 I-T	40.79	114.9	486.7	1,556.1	5.56	13.5	3.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	100.5	483.4	1,424.1	5.39	14.2	2.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	90.3	471.2	1,287.7	5.19	14.3	2.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	80.3	458.9	1,153.0	4.96	14.4	2.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	71.1	441.6	1,024.1	4.72	14.4	2.3	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	162.7	485.7	1,934.9	5.91	11.9	4.0	17.07	15.00	10.50	0.850	8.46
54 T	53.99	148.8	476.5	1,789.6	5.75	12.0	3.8	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	121.6	444.5	1,435.5	5.28	11.8	3.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	109.7	433.1	1,293.4	5.08	11.8	3.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	94.4	420.2	1,142.3	4.83	12.1	2.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	85.2	409.4	1,035.0	4.64	12.1	2.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	76.1	397.7	929.8	4.45	12.2	2.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	68.0	395.5	870.4	4.34	12.8	2.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	60.6	382.6	777.9	4.14	12.8	2.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	52.8	365.9	679.3	3.90	12.9	1.9	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	111.8	376.7	1,123.2	4.64	10.0	3.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	99.7	367.3	1,012.4	4.47	10.2	2.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	89.2	357.9	916.1	4.30	10.3	2.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	78.9	358.5	843.9	4.18	10.7	2.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	70.8	348.1	760.6	4.01	10.8	2.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	62.9	337.6	679.4	3.84	10.8	2.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	57.0	334.2	638.2	3.74	11.2	1.9	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	48.9	319.1	548.9	3.51	11.2	1.7	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	42.4	304.2	476.8	3.30	11.2	1.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	33.8	284.3	398.2	3.04	11.8	1.4	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.0	266.4	340.6	2.83	11.8	1.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.5	245.6	286.4	2.61	11.7	1.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.8	228.8	243.1	2.42	11.7	1.1	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	77.4	311.1	712.1	3.81	9.2	2.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	72.1	305.8	667.5	3.72	9.3	2.2	10.01	10.57	8.27	0.685	4.54
31 T	31.01	65.2	297.9	608.1	3.58	9.3	2.0	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	60.1	285.1	546.1	3.41	9.1	1.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	51.6	270.8	469.1	3.20	9.1	1.7	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	43.1	253.5	390.9	2.96	9.1	1.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	38.9	254.9	374.1	2.91	9.6	1.5	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	33.3	240.6	320.5	2.72	9.6	1.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	27.5	220.7	263.4	2.49	9.6	1.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.1	217.1	249.8	2.43	10.0	1.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.9	203.0	217.4	2.27	9.9	1.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.0	188.3	187.9	2.12	9.9	1.0	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.6	165.2	144.1	1.88	9.9	0.9	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	56.1	251.8	458.5	3.12	8.2	1.8	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	51.3	245.5	421.6	3.02	8.2	1.7	8.09	9.06	7.53	0.630	3.53
25 T	24.99	46.6	238.5	384.7	2.90	8.3	1.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	66.6	234.2	468.8	3.07	7.0	2.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	60.7	228.2	429.6	2.97	7.1	1.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	54.9	221.8	390.3	2.86	7.1	1.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	49.7	215.5	355.8	2.76	7.2	1.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	42.7	211.2	319.6	2.65	7.5	1.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	38.3	203.7	288.1	2.53	7.5	1.4	6.62	8.06	7.04	0.563	2.78



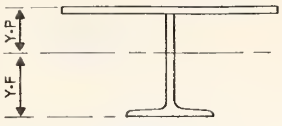
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 7 x 20 T	19.99	34.3	196.3	258.8	2.42	7.6	1.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	30.5	186.8	231.1	2.30	7.6	1.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	30.6	190.5	235.4	2.32	7.7	1.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.1	178.0	200.2	2.16	7.7	1.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	22.0	169.0	175.2	2.03	8.0	1.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	18.4	154.0	145.9	1.87	7.9	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	16.2	145.2	130.7	1.77	8.1	0.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.7	131.9	110.5	1.64	8.0	0.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.7	115.0	85.9	1.46	8.0	0.7	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	29.3	165.4	197.5	2.12	6.7	1.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.2	158.2	176.8	2.02	6.8	1.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.7	148.3	153.4	1.90	6.8	1.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.6	106.8	82.2	1.42	7.1	0.8	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.1	137.1	148.2	1.84	5.9	1.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.6	128.4	128.1	1.73	5.9	1.0	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.8	120.3	111.6	1.63	5.9	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.9	106.5	87.2	1.45	6.3	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.1	106.5	87.9	1.45	6.2	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.0	96.4	74.2	1.34	6.2	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.1	86.4	62.2	1.24	6.2	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.0	85.7	61.5	1.23	6.2	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.5	77.5	52.4	1.14	6.2	0.7	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	7.2	68.3	43.5	1.04	6.1	0.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.9	68.2	43.2	1.04	6.2	0.6	1.72	6.00	3.06	0.175	1.05

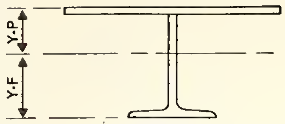


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	921.3	1,644.1	20,369.7	14.25	22.1	12.4	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	845.8	1,608.3	18,979.4	14.05	22.4	11.8	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	768.9	1,576.7	17,573.7	13.81	22.9	11.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	583.6	1,516.6	14,539.4	13.19	24.9	9.6	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	543.8	1,488.2	13,660.3	12.96	25.1	9.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	494.0	1,456.8	12,579.6	12.61	25.5	8.6	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	611.1	1,389.2	13,104.8	12.36	21.4	9.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	462.1	1,335.7	10,745.6	11.64	23.3	8.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	433.2	1,316.6	10,156.2	11.45	23.4	7.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	403.5	1,294.2	9,535.1	11.21	23.6	7.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	372.1	1,267.6	8,866.4	10.92	23.8	7.0	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	470.6	1,216.0	9,460.0	10.87	20.1	7.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	365.7	1,175.3	7,887.2	10.25	21.6	6.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	326.9	1,148.3	7,141.0	9.93	21.8	6.2	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	299.9	1,126.4	6,608.6	9.67	22.0	5.9	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	386.8	1,078.3	7,185.5	9.70	18.6	6.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	354.9	1,064.7	6,734.7	9.48	19.0	6.3	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	325.9	1,047.5	6,253.7	9.27	19.2	6.0	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	296.2	1,028.1	5,749.2	9.02	19.4	5.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	272.6	1,013.2	5,430.6	8.78	19.9	5.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	243.2	988.6	4,895.0	8.46	20.1	5.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	218.8	964.6	4,440.6	8.16	20.3	4.6	16.71	23.90	8.98	0.862	10.52
21 x 13 x 112 I-T	76.27	293.7	910.5	4,885.3	8.21	16.6	5.4	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	244.0	877.3	4,226.4	7.74	17.3	4.8	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	207.9	846.6	3,649.0	7.35	17.5	4.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	188.2	845.7	3,424.2	7.21	18.2	4.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	175.2	831.8	3,201.0	7.03	18.3	3.8	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	158.9	813.1	2,921.7	6.78	18.4	3.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	249.0	758.5	3,546.3	7.01	14.2	4.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	262.0	793.0	3,836.7	7.26	14.6	4.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	240.9	777.8	3,553.1	7.08	14.8	4.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	219.8	761.9	3,268.1	6.87	14.9	4.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	191.9	744.5	2,947.2	6.60	15.4	4.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	173.9	728.5	2,689.6	6.38	15.5	3.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	157.5	711.2	2,449.4	6.16	15.6	3.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	143.7	696.1	2,246.9	5.96	15.6	3.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	135.4	695.6	2,180.7	5.89	16.1	3.1	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	123.7	679.3	2,001.0	5.69	16.2	2.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	112.2	663.0	1,822.6	5.48	16.3	2.7	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	202.5	683.9	2,741.8	6.30	13.5	4.0	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	181.2	663.4	2,442.4	6.02	13.5	3.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	158.2	646.8	2,201.7	5.77	13.9	3.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	143.6	630.9	2,006.8	5.57	14.0	3.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	129.0	613.9	1,812.1	5.35	14.0	3.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	116.5	597.9	1,644.2	5.15	14.1	2.8	12.00	15.86	8.46	0.645	6.45



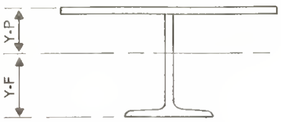
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
16 x 7 x 50 I-T	36.22	101.9	591.0	1,498.0	4.97	14.7	2.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	91.5	573.7	1,350.5	4.76	14.8	2.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	81.3	556.0	1,205.4	4.54	14.8	2.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	72.0	531.9	1,068.3	4.30	14.8	2.0	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	165.4	603.3	2,076.5	5.56	12.6	3.4	17.07	15.00	10.50	0.850	8.46
54 T	53.99	151.1	590.3	1,914.5	5.39	12.7	3.2	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	123.3	547.3	1,525.9	4.91	12.4	2.8	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	111.2	531.2	1,369.8	4.70	12.3	2.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	95.7	512.3	1,204.7	4.45	12.6	2.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	86.3	496.9	1,088.4	4.27	12.6	2.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	77.1	480.2	974.9	4.08	12.6	2.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	68.9	475.2	910.0	3.96	13.2	1.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	61.4	456.8	811.3	3.77	13.2	1.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	53.4	433.3	706.8	3.54	13.2	1.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	113.6	463.1	1,199.9	4.34	10.6	2.6	13.81	12.15	9.06	0.872	6.26
42 T	41.99	101.2	449.6	1,077.1	4.16	10.6	2.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	90.6	436.1	971.2	3.98	10.7	2.2	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	80.0	433.7	889.9	3.85	11.1	2.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	71.7	418.9	799.8	3.68	11.2	1.9	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	63.7	403.6	712.2	3.51	11.2	1.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	57.7	397.5	667.4	3.41	11.6	1.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	49.5	375.8	572.2	3.19	11.6	1.5	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	43.0	354.8	495.9	2.99	11.5	1.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.3	327.1	413.2	2.74	12.0	1.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.4	303.1	353.0	2.55	12.0	1.2	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.9	276.0	296.6	2.35	11.9	1.1	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.1	253.6	251.4	2.17	11.9	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	78.6	376.8	755.6	3.53	9.6	2.0	10.73	10.62	8.29	0.740	4.83
34 T	34.03	73.2	369.1	706.7	3.43	9.7	1.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	66.2	357.6	642.1	3.30	9.7	1.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	61.1	340.3	575.8	3.13	9.4	1.7	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	52.4	320.3	492.9	2.93	9.4	1.5	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	43.8	296.2	409.5	2.69	9.4	1.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	39.5	295.9	390.8	2.64	9.9	1.3	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	33.8	276.1	334.0	2.46	9.9	1.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	28.0	249.6	274.1	2.25	9.8	1.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.5	244.1	259.7	2.19	10.2	1.1	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.3	225.9	225.9	2.05	10.1	1.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.4	207.4	195.3	1.91	10.1	0.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.9	177.9	149.6	1.69	10.0	0.8	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	57.1	300.0	485.1	2.87	8.5	1.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	52.2	290.8	445.1	2.77	8.5	1.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	47.4	280.7	405.2	2.66	8.6	1.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	67.9	282.2	501.6	2.86	7.4	1.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	61.9	273.6	458.4	2.75	7.4	1.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	55.9	264.2	415.1	2.64	7.4	1.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	50.7	255.1	377.5	2.54	7.5	1.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	43.5	247.4	337.5	2.43	7.8	1.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	39.0	236.8	303.6	2.32	7.8	1.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	34.9	226.2	272.1	2.21	7.8	1.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.1	213.5	242.7	2.09	7.8	1.1	5.40	7.93	6.99	0.428	2.31



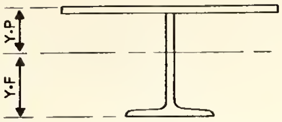
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 6 1/2 x 28 I-T	18.42	31.2	217.5	247.0	2.11	7.9	1.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.6	200.6	209.7	1.96	7.9	1.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	22.4	188.1	183.2	1.84	8.2	1.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	18.8	169.1	152.5	1.69	8.1	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	16.6	158.0	136.7	1.60	8.3	0.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	14.1	141.9	115.6	1.48	8.2	0.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	11.0	121.2	90.0	1.31	8.2	0.7	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	29.9	188.7	208.2	1.94	7.0	1.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.8	178.9	186.2	1.84	7.0	1.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.2	165.8	161.4	1.72	7.0	1.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	12.0	113.7	86.5	1.28	7.2	0.8	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.7	154.9	156.9	1.68	6.1	1.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	22.2	143.4	135.4	1.58	6.1	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	19.4	132.7	118.0	1.48	6.1	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	14.3	115.0	92.2	1.32	6.4	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.6	115.2	92.9	1.32	6.4	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.4	103.1	78.5	1.22	6.3	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.5	91.4	66.1	1.12	6.3	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.4	90.7	65.3	1.12	6.3	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.9	81.2	55.8	1.03	6.3	0.7	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	7.5	70.9	46.5	0.95	6.2	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.3	70.8	46.2	0.95	6.3	0.7	1.72	6.00	3.06	0.175	1.05



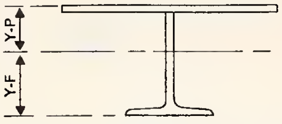
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
33 x 15 3/4 x 240 I-T	170.91	939.5	1,993.3	22,109.8	13.96	23.5	11.1	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	861.8	1,952.9	20,547.8	13.70	23.8	10.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	782.6	1,916.3	18,962.9	13.41	24.2	9.9	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	593.5	1,844.8	15,548.5	12.67	26.2	8.4	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	552.7	1,812.0	14,580.1	12.41	26.4	8.0	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	501.9	1,773.1	13,388.4	12.04	26.7	7.6	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	621.0	1,692.1	14,084.7	11.92	22.7	8.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	469.5	1,624.3	11,445.5	11.12	24.4	7.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	439.9	1,601.3	10,796.3	10.91	24.5	6.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	409.6	1,573.8	10,116.0	10.65	24.7	6.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	377.7	1,540.7	9,387.0	10.35	24.9	6.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	477.6	1,481.3	10,114.3	10.41	21.2	6.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	371.1	1,428.0	8,365.9	9.74	22.5	5.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	331.5	1,394.4	7,548.1	9.39	22.8	5.4	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	303.9	1,366.8	6,968.4	9.11	22.9	5.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	392.1	1,312.8	7,658.6	9.24	19.5	5.8	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	359.8	1,294.5	7,158.5	9.01	19.9	5.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	330.1	1,272.9	6,628.3	8.78	20.1	5.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	299.9	1,248.3	6,075.0	8.51	20.3	4.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	276.3	1,227.1	5,728.9	8.27	20.7	4.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	246.3	1,195.6	5,146.9	7.94	20.9	4.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	221.5	1,164.3	4,656.4	7.63	21.0	4.0	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	297.5	1,105.1	5,185.6	7.78	17.4	4.7	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	247.4	1,059.9	4,465.6	7.30	18.1	4.2	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	210.6	1,020.2	3,837.6	6.89	18.2	3.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	190.5	1,016.8	3,589.1	6.74	18.8	3.5	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	177.3	998.4	3,348.9	6.55	18.9	3.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	160.7	973.2	3,049.4	6.30	19.0	3.1	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	252.5	918.7	3,771.9	6.65	14.9	4.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	265.7	960.0	4,079.3	6.89	15.4	4.2	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	244.0	940.4	3,767.5	6.69	15.4	4.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	222.5	919.7	3,455.5	6.48	15.5	3.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	194.4	895.1	3,105.2	6.19	16.0	3.5	17.74	18.32	8.84	0.911	9.63
77 I-T	54.46	176.0	873.8	2,825.6	5.97	16.1	3.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	159.3	850.7	2,566.6	5.74	16.1	3.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	145.4	830.3	2,348.8	5.54	16.2	2.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	137.0	828.0	2,276.5	5.47	16.6	2.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	125.1	806.1	2,084.7	5.27	16.7	2.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	113.4	783.6	1,894.8	5.06	16.7	2.4	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	205.2	824.8	2,904.5	5.94	14.2	3.5	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	183.5	797.0	2,578.1	5.66	14.1	3.2	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	160.3	773.5	2,316.5	5.40	14.5	3.0	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	145.4	752.3	2,105.9	5.20	14.5	2.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	130.6	729.4	1,896.5	4.98	14.5	2.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	117.9	707.5	1,716.7	4.78	14.6	2.4	12.00	15.86	8.46	0.645	6.45



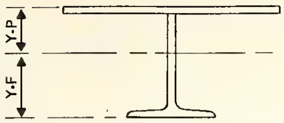
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
16 x 7 x 50 I-T	36.22	103.1	695.4	1,558.8	4.59	15.1	2.2	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	92.5	671.8	1,402.3	4.39	15.2	2.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	82.2	647.0	1,248.8	4.17	15.2	1.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	72.9	615.2	1,105.1	3.94	15.2	1.8	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	167.6	723.6	2,194.3	5.23	13.1	3.0	17.07	15.00	10.50	0.850	8.46
54 T	53.99	153.2	705.9	2,018.1	5.05	13.2	2.9	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	124.9	649.3	1,600.8	4.57	12.8	2.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	112.5	627.3	1,433.0	4.37	12.7	2.3	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	96.9	600.8	1,256.6	4.12	13.0	2.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	87.3	579.8	1,132.8	3.94	13.0	2.0	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	78.0	556.8	1,012.6	3.75	13.0	1.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	69.7	548.0	943.2	3.64	13.5	1.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	62.1	523.1	839.5	3.45	13.5	1.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	54.1	492.1	730.3	3.24	13.5	1.5	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	115.2	548.4	1,264.0	4.05	11.0	2.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	102.6	529.6	1,131.3	3.87	11.0	2.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	91.8	510.9	1,017.5	3.70	11.1	2.0	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	81.0	504.2	928.6	3.56	11.5	1.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	72.7	484.0	832.9	3.40	11.5	1.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	64.5	463.0	740.1	3.22	11.5	1.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	58.5	453.6	692.5	3.13	11.8	1.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	50.2	424.4	592.5	2.92	11.8	1.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	43.6	396.8	512.8	2.73	11.8	1.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.9	361.1	426.8	2.50	12.2	1.2	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.9	331.1	364.5	2.32	12.2	1.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	25.3	298.1	306.3	2.14	12.1	1.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.5	270.7	259.6	1.98	12.1	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	79.8	438.6	792.6	3.27	9.9	1.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	74.3	427.9	740.1	3.18	10.0	1.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	67.2	412.0	671.2	3.05	10.0	1.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	62.0	389.9	601.3	2.89	9.7	1.5	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	53.2	363.4	513.8	2.69	9.7	1.4	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	44.5	332.1	426.0	2.47	9.6	1.3	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	40.1	329.6	405.8	2.42	10.1	1.2	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	34.4	304.1	346.5	2.25	10.1	1.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	28.5	271.3	284.2	2.05	10.0	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	26.0	264.1	269.1	2.00	10.3	1.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.8	242.2	234.3	1.87	10.3	1.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.9	220.4	202.6	1.74	10.2	0.9	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	15.3	185.7	155.5	1.54	10.1	0.8	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	58.0	343.0	508.3	2.66	8.8	1.5	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	53.1	330.6	465.7	2.55	8.8	1.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	48.2	317.1	423.4	2.45	8.8	1.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	69.2	326.8	530.3	2.66	7.7	1.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	63.0	314.9	483.6	2.56	7.7	1.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	56.9	302.1	437.0	2.45	7.7	1.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	51.6	289.8	396.7	2.35	7.7	1.4	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	44.3	278.3	353.6	2.24	8.0	1.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	39.8	264.3	317.7	2.13	8.0	1.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	35.6	250.4	284.4	2.03	8.0	1.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.8	234.6	253.6	1.92	8.0	1.1	5.40	7.93	6.99	0.428	2.31



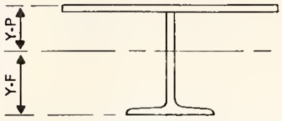
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

50t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 6 1/2 x 28 I-T	18.42	31.8	238.7	257.9	1.94	8.1	1.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	27.2	217.6	218.8	1.80	8.0	1.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	23.0	201.8	191.1	1.69	8.3	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	19.3	179.4	159.3	1.55	8.2	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	17.0	166.6	142.9	1.47	8.4	0.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	14.6	148.3	121.2	1.35	8.3	0.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	11.5	124.9	94.7	1.20	8.3	0.8	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	30.6	207.1	218.5	1.78	7.1	1.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	27.4	194.7	195.3	1.69	7.1	1.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.8	178.7	169.3	1.58	7.1	0.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	12.4	118.2	91.4	1.18	7.4	0.8	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	26.4	168.7	165.5	1.55	6.3	1.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	22.9	154.6	142.9	1.45	6.2	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	20.0	141.8	124.5	1.36	6.2	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	14.9	120.9	97.5	1.21	6.6	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.2	121.3	98.3	1.22	6.5	0.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	13.0	107.7	83.4	1.12	6.4	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	11.1	95.0	70.5	1.04	6.4	0.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.9	94.1	69.7	1.03	6.4	0.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	9.4	83.9	59.8	0.96	6.4	0.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	8.0	73.0	50.3	0.88	6.3	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.8	72.8	50.0	0.88	6.4	0.7	1.72	6.00	3.06	0.175	1.05



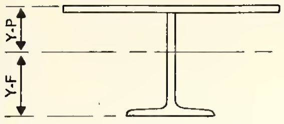
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,283.2	2,702.7	33,037.3	15.30	25.7	12.2	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,200.0	2,660.0	31,216.6	15.10	26.0	11.7	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,112.2	2,610.0	29,236.8	14.83	26.3	11.2	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,046.3	2,574.7	27,758.1	14.63	26.5	10.8	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	982.6	2,538.9	26,304.7	14.41	26.8	10.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	816.3	2,478.8	23,169.6	13.81	28.4	9.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	765.9	2,446.2	21,914.3	13.58	28.6	9.0	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	715.6	2,413.0	20,647.3	13.34	28.9	8.6	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	672.0	2,378.4	19,517.1	13.08	29.0	8.2	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	628.0	2,342.7	18,369.5	12.81	29.2	7.8	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	954.5	2,375.9	23,662.5	13.58	24.8	10.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	874.8	2,329.7	21,935.8	13.28	25.1	9.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	793.8	2,286.6	20,181.9	12.95	25.4	8.8	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	601.6	2,199.9	16,416.4	12.12	27.3	7.5	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	560.0	2,161.2	15,366.9	11.85	27.4	7.1	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	508.4	2,113.2	14,076.5	11.46	27.7	6.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	769.6	2,108.6	17,834.0	12.10	23.2	8.5	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	695.8	2,063.4	16,322.1	11.78	23.5	7.9	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	629.1	2,019.9	14,933.3	11.45	23.7	7.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	475.6	1,933.6	12,042.4	10.59	25.3	6.2	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	445.4	1,905.5	11,339.9	10.36	25.5	6.0	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	414.6	1,871.6	10,607.2	10.10	25.6	5.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	382.3	1,830.6	9,825.6	9.79	25.7	5.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	483.3	1,765.6	10,674.2	9.94	22.1	6.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	375.5	1,695.7	8,770.8	9.22	23.4	5.2	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	335.2	1,653.5	7,890.2	8.86	23.5	4.8	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	307.3	1,618.5	7,269.5	8.57	23.7	4.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	396.5	1,561.6	8,060.8	8.78	20.3	5.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	363.9	1,537.2	7,517.7	8.54	20.7	4.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	333.7	1,509.9	6,944.2	8.30	20.8	4.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	302.9	1,478.3	6,348.3	8.01	21.0	4.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	279.3	1,449.7	5,979.5	7.79	21.4	4.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	248.9	1,409.0	5,357.6	7.45	21.5	3.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	223.7	1,368.7	4,836.4	7.14	21.6	3.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	300.7	1,308.3	5.439.6	7.35	18.1	4.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	250.3	1,248.4	4,667.9	6.87	18.7	3.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	212.9	1,196.9	3,996.1	6.46	18.8	3.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	192.6	1,189.6	3,727.2	6.30	19.4	3.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	179.1	1,165.3	3,472.7	6.11	19.4	3.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	162.3	1,132.2	3,156.3	5.87	19.4	2.8	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	255.5	1,084.2	3,963.9	6.29	15.5	3.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	268.7	1,133.2	4,285.9	6.52	15.9	3.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	246.8	1,107.9	3,949.6	6.31	16.0	3.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	224.9	1,080.9	3,614.1	6.10	16.1	3.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	196.6	1,047.5	3,238.9	5.81	16.5	3.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	177.9	1,019.3	2,940.5	5.59	16.5	2.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	161.0	988.9	2,665.5	5.36	16.6	2.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	146.9	961.8	2,434.9	5.16	16.6	2.5	13.29	17.86	8.71	0.686	7.20

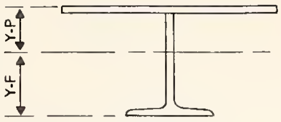


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 7 1/2 x 60 1-T	43.76	138.5	957.1	2,357.4	5.09	17.0	2.5	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	126.4	928.2	2,155.6	4.89	17.0	2.3	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	114.6	898.3	1,956.0	4.69	17.1	2.2	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	207.6	967.9	3,042.9	5.59	14.7	3.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	185.5	931.2	2,693.4	5.31	14.5	2.9	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	162.2	899.4	2,414.2	5.06	14.9	2.7	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	147.0	871.5	2,190.3	4.86	14.9	2.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	132.0	841.2	1,968.4	4.64	14.9	2.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	119.2	812.3	1,778.6	4.44	14.9	2.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	104.2	793.5	1,610.9	4.26	15.5	2.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	93.5	762.3	1,447.0	4.06	15.5	1.9	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	83.1	729.3	1,286.4	3.85	15.5	1.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	73.7	688.9	1,137.3	3.64	15.4	1.7	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	169.6	843.6	2,294.8	4.91	13.5	2.7	17.07	15.00	10.50	0.850	8.46
54 T	53.99	155.0	820.1	2,106.6	4.73	13.6	2.6	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	126.3	747.5	1,665.0	4.27	13.2	2.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	113.7	718.3	1,487.4	4.06	13.1	2.1	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	98.0	683.0	1,301.5	3.83	13.3	1.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	88.3	655.4	1,171.6	3.65	13.3	1.8	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	78.9	625.4	1,045.8	3.47	13.3	1.7	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	70.6	612.0	972.6	3.36	13.8	1.6	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	62.9	580.1	864.8	3.18	13.8	1.5	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	54.8	541.1	751.7	2.98	13.7	1.4	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	116.7	630.0	1,319.7	3.79	11.3	2.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	103.9	604.8	1,178.4	3.61	11.3	1.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	93.0	580.1	1,057.9	3.44	11.4	1.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	82.0	567.9	962.8	3.31	11.7	1.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	73.6	541.7	862.4	3.15	11.7	1.6	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	65.4	514.4	765.2	2.98	11.7	1.5	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	59.3	501.3	715.2	2.89	12.1	1.4	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	50.9	464.4	611.3	2.69	12.0	1.3	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	44.2	430.1	528.7	2.51	12.0	1.2	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	35.4	386.9	440.0	2.30	12.4	1.1	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	30.5	351.4	375.8	2.13	12.3	1.1	4.34	12.16	4.01	0.349	2.91
16.51-T	13.11	25.8	313.5	316.1	1.96	12.2	1.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	22.0	281.8	268.2	1.81	12.2	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	80.9	494.6	825.5	3.05	10.2	1.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	75.4	480.5	770.0	2.96	10.2	1.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	68.2	460.0	697.4	2.83	10.2	1.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	62.9	432.8	624.6	2.68	9.9	1.4	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	54.1	399.6	533.1	2.49	9.9	1.3	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	45.2	361.0	441.7	2.29	9.8	1.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	40.8	356.1	420.1	2.24	10.3	1.2	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	35.1	325.4	358.7	2.08	10.2	1.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	29.1	287.1	294.5	1.89	10.1	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	26.6	278.2	278.8	1.84	10.5	1.0	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	23.3	253.4	243.0	1.72	10.4	1.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	20.4	229.0	210.6	1.61	10.3	0.9	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	59.0	380.2	529.7	2.47	9.0	1.4	8.82	9.12	7.56	0.695	3.79



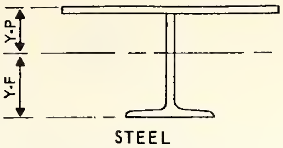
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	54.0	364.3	484.9	2.37	9.0	1.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	49.0	347.2	440.4	2.27	9.0	1.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	70.5	366.7	556.4	2.49	7.9	1.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	64.2	351.4	506.7	2.39	7.9	1.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	58.0	334.9	457.4	2.29	7.9	1.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	52.6	319.3	414.8	2.19	7.9	1.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	45.2	303.6	369.0	2.08	8.2	1.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	40.7	286.4	331.4	1.98	8.2	1.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	36.4	269.3	296.6	1.88	8.1	1.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	32.6	250.7	264.6	1.78	8.1	1.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	32.6	254.9	268.8	1.79	8.3	1.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	27.9	230.1	228.3	1.66	8.2	1.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	23.6	211.6	199.5	1.56	8.4	0.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	19.9	186.5	166.7	1.43	8.4	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	17.6	172.5	149.9	1.36	8.5	0.9	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	31.5	221.4	228.9	1.65	7.3	1.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	28.2	206.7	204.7	1.57	7.3	1.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	24.6	188.3	177.7	1.47	7.2	0.9	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	27.3	179.4	174.5	1.45	6.4	1.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	23.7	163.1	150.9	1.35	6.4	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	20.8	148.7	131.8	1.27	6.3	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	15.6	125.4	103.7	1.13	6.7	0.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.9	125.9	104.5	1.13	6.6	0.8	3.24	6.16	4.03	0.424	1.60

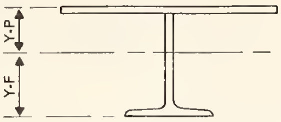


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,302.0	3,164.1	35,139.0	14.94	27.0	11.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,216.7	3,116.6	33,144.0	14.71	27.2	10.6	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,127.2	3,059.5	30,983.7	14.41	27.5	10.1	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,060.0	3,019.3	29,369.2	14.18	27.7	9.7	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	995.0	2,978.1	27,785.8	13.94	27.9	9.3	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	827.0	2,902.5	24,363.0	13.29	29.5	8.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	775.5	2,864.7	23,005.2	13.05	29.7	8.0	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	724.2	2,825.9	21,637.1	12.78	29.9	7.7	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	679.8	2,784.9	20,423.2	12.52	30.0	7.3	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	635.2	2,742.2	19,192.6	12.23	30.2	7.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	966.9	2,785.0	25,030.4	13.15	25.9	9.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	885.7	2,731.4	23,150.5	12.83	26.1	8.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	803.1	2,680.1	21,241.5	12.47	26.4	7.9	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	608.3	2,573.6	17,159.4	11.57	28.2	6.7	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	566.1	2,527.8	16,037.4	11.29	28.3	6.3	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	513.8	2,468.6	14,660.7	10.89	28.5	5.9	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	778.9	2,470.7	18,806.0	11.67	24.1	7.6	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	703.7	2,417.4	17,165.4	11.32	24.4	7.1	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	635.9	2,365.3	15,663.8	10.96	24.6	6.6	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	480.7	2,255.6	12,550.7	10.07	26.1	5.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	450.1	2,221.2	11,801.3	9.83	26.2	5.3	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	418.9	2,179.5	11,023.2	9.57	26.3	5.1	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	386.1	2,128.9	10,196.2	9.26	26.4	4.8	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	488.2	2,061.3	11,152.6	9.46	22.8	5.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	379.3	1,970.6	9,114.1	8.73	24.0	4.6	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	338.4	1,917.5	8,179.3	8.36	24.2	4.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	310.1	1,873.5	7,523.5	8.08	24.3	4.0	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	400.3	1,817.5	8,403.3	8.34	21.0	4.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	367.4	1,785.6	7,823.0	8.09	21.3	4.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	336.7	1,750.9	7,211.8	7.84	21.4	4.1	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	305.6	1,710.4	6,579.5	7.56	21.5	3.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	282.0	1,673.5	6,191.7	7.34	22.0	3.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62,38	251.2	1,621.5	5,535.8	7.00	22.0	3.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	225.8	1,570.1	4,988.6	6.70	22.1	3.2	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	303.5	1,513.3	5,656.1	6.95	18.6	3.7	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	252.8	1,436.4	4,840.4	6.48	19.1	3.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	214.9	1,370.4	4,131.3	6.07	19.2	3.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	194.4	1,357.4	3,845.0	5.90	19.8	2.8	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	180.8	1,326.2	3,578.3	5.72	19.8	2.7	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	163.8	1,283.5	3,247.7	5.48	19.8	2.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	258.2	1,249.4	4,128.8	5.95	16.0	3.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	271.5	1,306.6	4,463.2	6.17	16.4	3.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	249.2	1,274.4	4,105.6	5.96	16.5	3.2	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	227.1	1,239.7	3,750.0	5.74	16.5	3.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	198.6	1,195.8	3,353.7	5.47	16.9	2.8	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	179.7	1,159.3	3,039.2	5.24	16.9	2.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	162.6	1,120.3	2,750.7	5.02	16.9	2.5	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	148.3	1,085.2	2,509.2	4.82	16.9	2.3	13.29	17.86	8.71	0.686	7.20

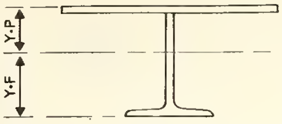


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 7 1/2 x 60 1-T	43.76	139.8	1,077.5	2,427.4	4.75	17.4	2.3	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	127.7	1,040.7	2,217.3	4.57	17.4	2.1	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	115.7	1,002.4	2,009.6	4.37	17.4	2.0	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	209.8	1,108.0	3,162.0	5.28	15.1	2.9	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	187.4	1,060.9	2,792.8	5.00	14.9	2.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	163.9	1,019.4	2,498.8	4.75	15.2	2.5	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	148.6	983.7	2,263.7	4.55	15.2	2.3	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	133.4	945.0	2,031.2	4.34	15.2	2.1	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	120.5	908.0	1,832.9	4.15	15.2	2.0	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	105.3	881.3	1,657.0	3.97	15.7	1.9	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	94.5	841.8	1,486.8	3.78	15.7	1.8	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	84.0	800.0	1,320.3	3.58	15.7	1.7	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	74.5	750.8	1,166.7	3.38	15.7	1.6	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	171.5	958.6	2,382.0	4.62	13.9	2.5	17.07	15.00	10.50	0.850	8.46
54 T	53.99	156.7	928.5	2,183.5	4.45	13.9	2.4	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	127.7	838.0	1,721.5	4.00	13.5	2.1	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	115.0	800.7	1,535.6	3.80	13.4	1.9	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	99.1	755.9	1,341.7	3.57	13.5	1.8	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	89.4	721.1	1,206.6	3.40	13.5	1.7	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	79.8	683.7	1,076.0	3.23	13.5	1.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	71.4	665.4	999.7	3.12	14.0	1.5	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	63.7	626.5	888.4	2.96	14.0	1.4	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	55.5	579.7	772.0	2.77	13.9	1.3	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	118.2	704.7	1,369.2	3.56	11.6	1.9	13.81	12.15	9.06	0.872	6.26
42 T	41.99	105.2	672.5	1,220.7	3.38	11.6	1.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	94.2	641.2	1,094.5	3.22	11.6	1.7	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	83.1	622.8	994.0	3.09	12.0	1.6	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	74.6	590.4	889.6	2.93	11.9	1.5	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	66.3	556.6	788.7	2.78	11.9	1.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	60.1	539.8	736.7	2.69	12.3	1.4	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	51.7	495.4	629.4	2.50	12.2	1.3	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	44.9	455.1	544.4	2.33	12.1	1.2	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	36.1	405.3	453.4	2.14	12.6	1.1	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	31.1	365.3	387.6	1.98	12.5	1.1	4.34	12.16	4.01	0.349	2.91
16.51-T	13.11	26.4	323.6	326.7	1.82	12.4	1.0	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	22.5	288.7	277.6	1.68	12.3	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	82.1	543.2	855.7	2.85	10.4	1.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	76.5	525.6	797.7	2.76	10.4	1.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	69.3	500.2	722.0	2.64	10.4	1.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	63.9	468.3	646.7	2.50	10.1	1.4	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	55.0	428.6	551.8	2.33	10.0	1.3	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	46.1	383.3	457.2	2.13	9.9	1.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	41.6	376.1	434.6	2.08	10.4	1.2	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	35.8	340.7	371.2	1.93	10.4	1.1	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	29.8	298.0	305.3	1.76	10.3	1.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	27.3	287.8	289.2	1.71	10.6	1.0	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	24.0	260.8	252.6	1.60	10.5	1.0	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	21.0	234.7	219.4	1.50	10.4	0.9	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	60.1	410.8	550.3	2.31	9.2	1.3	8.82	9.12	7.56	0.695	3.79



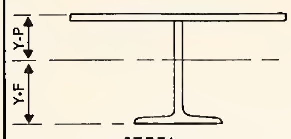
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	55.0	391.6	503.5	2.22	9.1	1.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	50.0	371.1	457.3	2.12	9.1	1.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	71.9	401.1	581.1	2.34	8.1	1.4	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	65.5	382.4	528.8	2.24	8.1	1.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	59.2	362.2	477.0	2.14	8.1	1.3	9.40	8.00	8.50	0.715	3.54
29 T	28.97	53.8	343.3	432.5	2.05	8.0	1.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	46.2	323.7	384.4	1.94	8.3	1.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	41.6	303.5	345.3	1.85	8.3	1.1	6.62	8.06	7.04	0.563	2.78
18 T	18.36	33.4	262.8	276.1	1.66	8.3	1.1	5.40	7.93	6.99	0.428	2.31
20 T	19.99	37.3	283.7	309.2	1.75	8.3	1.1	5.88	8.00	7.00	0.503	2.45
8 x 6 1/2 x 28 1-T	18.42	33.4	266.9	280.3	1.67	8.4	1.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	28.7	239.3	238.5	1.55	8.3	1.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	24.4	218.5	208.7	1.46	8.6	1.0	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	20.7	191.6	175.1	1.34	8.5	0.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	18.3	176.8	157.8	1.27	8.6	0.9	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	32.4	232.3	240.0	1.55	7.4	1.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	29.1	215.7	214.9	1.47	7.4	1.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	25.4	195.5	187.0	1.37	7.3	1.0	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	28.3	187.8	184.4	1.36	6.5	1.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	24.7	169.9	159.8	1.27	6.5	0.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	21.7	154.2	140.0	1.19	6.4	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	16.4	129.4	111.0	1.07	6.8	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	16.8	130.0	111.9	1.07	6.7	0.9	3.24	6.16	4.03	0.424	1.60

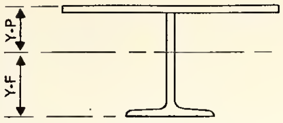


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

61.2# PLATE WEIGHT

NOMINAL SIZE				WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
					LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
													WIDTH	THICK	
IN. x IN. x LBS./FT.				LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36	x 16 1/2 x	300	I-T	214.24	1,317.9	3,658.3	37,030.1	14.53	28.1	10.1	63.01	36.72	16.65	1.680	34.70
		280	I-T	199.68	1,231.0	3,604.9	34,869.3	14.27	28.3	9.7	58.73	36.50	16.59	1.570	32.30
		260	I-T	186.30	1,139.9	3,539.1	32,539.8	13.95	28.5	9.2	54.79	36.24	16.55	1.440	30.62
		245	I-T	175.31	1,071.5	3,492.9	30,798.2	13.70	28.7	8.8	51.56	36.06	16.51	1.350	28.92
		230	I-T	165.10	1,005.5	3,445.0	29,094.3	13.44	28.9	8.4	48.56	35.88	16.47	1.260	27.44
36	x 12	x 194	I-T	147.66	836.0	3,350.5	25,410.8	12.77	30.4	7.6	43.43	36.48	12.12	1.260	28.08
		182	I-T	138.34	783.7	3,306.2	23,959.1	12.51	30.6	7.2	40.69	36.32	12.07	1.180	26.33
		170	I-T	129.07	731.5	3,260.2	22,499.3	12.23	30.8	6.9	37.96	36.16	12.03	1.100	24.58
		160	I-T	122.03	686.5	3,211.2	21,210.2	11.96	30.9	6.6	35.89	36.00	12.00	1.020	23.50
		150	I-T	114.89	641.3	3,159.9	19,905.5	11.66	31.0	6.3	33.79	35.84	11.97	0.940	22.40
33	x 15 3/4 x	240	I-T	170.91	977.5	3,219.5	26,243.5	12.70	26.8	8.2	50.27	33.50	15.86	1.400	27.80
		220	I-T	157.07	894.9	3,156.8	24,221.8	12.35	27.1	7.7	46.20	33.24	15.81	1.275	25.76
		200	I-T	143.50	811.0	3,095.2	22,171.1	11.97	27.3	7.2	42.21	33.00	15.57	1.150	23.59
33	x 11 1/2 x	152	I-T	114.31	614.1	2,963.5	17,803.8	11.04	29.0	6.0	33.62	33.50	11.56	1.055	21.27
		141	I-T	106.62	571.3	2,908.8	16,617.2	10.75	29.1	5.7	31.36	33.30	11.53	0.960	24.15
		130	I-T	99.11	518.4	2,836.1	15,164.8	10.35	29.3	5.3	29.15	33.10	11.51	0.855	19.19
30	x 15	x 210	I-T	148.40	786.9	2,852.3	19,661.9	11.22	25.0	6.9	43.65	30.38	15.10	1.315	23.54
		190	I-T	134.24	710.5	2,788.8	17,903.9	10.85	25.2	6.4	39.48	30.12	15.04	1.185	21.38
		172	I-T	121.81	641.7	2,726.0	16,300.5	10.48	25.4	6.0	35.83	29.88	14.98	1.065	19.57
30	x 10 1/2 x	132	I-T	99.55	485.1	2,587.5	12,990.6	9.57	26.8	5.0	29.28	30.30	10.55	1.000	18.63
		124	I-T	93.60	454.1	2,545.3	12,199.9	9.33	26.9	4.8	27.53	30.16	10.52	0.930	17.64
		116	I-T	88.15	422.6	2,494.1	11,382.0	9.07	26.9	4.6	25.93	30.00	10.50	0.850	16.92
		108	I-T	82.89	389.5	2,432.1	10,515.7	8.76	27.0	4.3	24.38	29.82	10.48	0.760	16.34
27	x 14	x 145	I-T	102.05	492.4	2,365.8	11,567.7	9.01	23.5	4.9	30.01	26.88	13.96	0.975	16.12
27	x 10	x 114	I-T	85.05	382.6	2,249.6	9,411.1	8.27	24.6	4.2	25.01	27.28	10.07	0.932	15.54
		102	I-T	76.19	341.3	2,183.1	8,428.8	7.90	24.7	3.9	22.41	27.06	10.02	0.827	14.02
		94	I-T	70.53	312.7	2,128.0	7,742.7	7.62	24.8	3.6	20.75	26.90	9.99	0.747	13.18
24	x 14	x 130	I-T	89.83	403.7	2,077.5	8,700.5	7.91	21.6	4.2	26.42	24.24	14.00	0.900	13.70
24	x 12	x 120	I-T	84.70	370.5	2,036.6	8.087.9	7.67	21.8	4.0	24.91	24.30	12.09	0.930	13.51
		110	I-T	77.50	339.5	1,992.7	7,443.7	7.42	21.9	3.7	22.80	24.16	12.04	0.855	12.32
		100	I-T	70.48	308.1	1,941.4	6,779.5	7.13	22.0	3.5	20.73	24.00	12.00	0.775	11.23
24	x 9	x 94	I-T	69.66	284.4	1,895.1	6,375.9	6.92	22.4	3.4	20.49	24.28	9.06	0.872	12.53
		84	I-T	62.38	253.3	1,829.7	5.690.5	6.59	22.5	3.1	18.35	24.08	9.01	0.772	11.32
		76	I-T	56.81	227.6	1,765.3	5,121.0	6.30	22.5	2.9	16.71	23.90	8.98	0.682	10.52
21	x 13	x 112	I-T	76.27	306.1	1,717.2	5,844.6	6.58	19.1	3.4	22.43	21.00	13.00	0.865	11.06
21	x 9	x 96	I-T	70.15	255.2	1,620.9	4,991.3	6.12	19.6	3.1	20.63	21.14	9.04	0.935	12.15
		82	I-T	59.86	216.9	1,537.7	4,249.7	5.72	19.6	2.8	17.61	20.86	8.96	0.795	10.40
21	x 8 1/4 x	73	I-T	53.96	196.1	1,517.4	3,948.4	5.55	20.1	2.6	15.87	21.24	8.29	0.740	9.66
		68	I-T	50.40	182.3	1,478.1	3,671.3	5.37	20.1	2.5	14.82	21.12	8.27	0.685	9.08
		62	I-T	46.04	165.2	1,424.7	3,328.6	5.14	20.1	2.3	13.54	20.98	8.24	0.615	8.39
18	x 12	x 75	T	75.07	260.7	1,411.7	4,273.7	5.64	16.4	3.0	22.08	17.92	11.97	0.940	11.20
18	x 11 3/4 x	114	I-T	77.40	274.1	1,477.6	4,618.9	5.84	16.9	3.1	22.77	18.48	11.83	0.991	10.99
		105	I-T	71.22	251.5	1,437.2	4,242.7	5.64	16.9	3.0	20.95	18.32	11.79	0.911	10.14
		96	I-T	65 10	229.2	1,393.5	3,869.5	5.42	16.9	2.8	19.15	18.16	11.75	0.831	9.29
18	x 8 3/4 x	85	I-T	60.34	200.4	1,337.6	3,455.1	5.15	17.2	2.6	17.75	18.32	8.84	0.911	9.63
		77	I-T	54.46	181.4	1,291.6	3,126.8	4.93	17.2	2.4	16.02	18.16	8.79	0.831	8.62
		70	I-T	49.48	164.1	1,242.7	2,826.6	4.72	17.2	2.3	14.55	18.00	8.75	0.751	7.88
		64	I-T	45.19	149.7	1,198.7	2,575.8	4.53	17.2	2.1	13.29	17.86	8.71	0.686	7.20



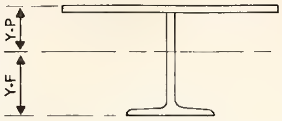
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	141.2	1,187.6	2,490.3	4.46	17.6	2.1	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	128.9	1,142.1	2,272.9	4.28	17.6	2.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	116.8	1,094.6	2,058.3	4.09	17.6	1.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	211.9	1,242.8	3,267.5	4.98	15.4	2.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	207.6	1,226.5	3,163.7	4.91	15.2	2.6	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	189.2	1,183.8	2,881.3	4.71	15.2	2.4	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	165.6	1,131.8	2,574.6	4.47	15.5	2.3	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	150.1	1,087.4	2,329.7	4.28	15.5	2.1	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	134.8	1,039.2	2,088.1	4.08	15.5	2.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	121.7	993.6	1,882.4	3.89	15.5	1.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	106.4	958.0	1,699.4	3.71	16.0	1.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	95.6	910.0	1,523.8	3.53	15.9	1.7	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	129.1	919.7	1,773.0	3.75	13.7	1.9	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	116.2	873.7	1,580.0	3.56	13.6	1.8	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	100.3	818.9	1,379.1	3.35	13.8	1.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	90.4	776.9	1,239.5	3.18	13.7	1.6	9.70	13.80	8.03	0.593	4.68
12 x 10 x 53 I-T	34.55	89.7	687.5	1,076.5	2.96	12.0	1.6	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	119.7	771.7	1,415.0	3.35	11.8	1.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	106.6	732.0	1,260.1	3.18	11.8	1.7	12.35	12.04	9.01	0.772	5.65
38 T	38.01	95.5	694.0	1,129.0	3.02	11.8	1.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	84.3	669.1	1,023.8	2.89	12.1	1.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	75.7	630.6	916.0	2.75	12.1	1.5	8.94	12.06	8.04	0.576	4.05
10 1/2 x 8 1/4 x 36.5 T	36.48	83.4	584.5	884.7	2.68	10.6	1.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	77.7	563.4	824.5	2.59	10.6	1.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	70.4	533.4	746.0	2.48	10.6	1.4	9.12	10.49	8.24	0.615	4.19
9 x 8 3/4 x 35 T	34.95	72.6	471.2	660.8	2.32	9.1	1.4	10.28	9.00	8.75	0.751	3.94
32 T	31.96	66.6	448.9	605.3	2.23	9.1	1.3	9.40	8.94	8.71	0.686	3.60
8 x 8 1/2 x 39 T	38.96	73.3	430.5	605.4	2.21	8.3	1.4	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	66.9	408.3	550.9	2.12	8.2	1.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	60.5	384.8	496.9	2.02	8.2	1.3	9.40	8.00	8.50	0.715	3.54



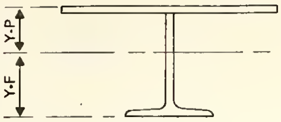
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

50t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,343.6	4,721.6	40,237.9	13.64	29.9	8.5	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,253.9	4,651.6	37,778.3	13.35	30.1	8.1	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,160.5	4,563.5	35,149.4	13.00	30.3	7.7	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,090.2	4,500.8	33,183.5	12.73	30.4	7.4	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,022.6	4,435.1	31,269.3	12.45	30.6	7.1	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	850.7	4,291.8	27,142.1	11.75	31.9	6.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	797.0	4,229.4	25,529.4	11.48	32.0	6.0	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	743.4	4,163.8	23,913.5	11.19	32.2	5.7	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	697.5	4,094.0	22,498.0	10.91	32.3	5.5	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	651.3	4,020.2	21,069.3	10.62	32.3	5.2	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	994.7	4,139.6	28,269.8	11.79	28.4	6.8	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	910.0	4,052.7	26,001.6	11.42	28.6	6.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	824.1	3,963.6	23,707.3	11.02	28.8	6.0	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	623.7	3,763.1	18,858.4	10.05	30.2	5.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	580.0	3,685.1	17,564.0	9.76	30.3	4.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	526.2	3,578.6	15,987.1	9.37	30.4	4.5	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	800.1	3,649.2	21,083.7	10.35	26.4	5.8	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	721.8	3,558.2	19,124.2	9.96	26.5	5.4	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	651.6	3,466.9	17,348.2	9.58	26.6	5.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	492.6	3,253.6	13,711.9	8.67	27.8	4.2	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	461.0	3,190.9	12,853.0	8.43	27.9	4.0	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	428.9	3,116.0	11,970.0	8.18	27.9	3.8	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	395.4	3,026.2	11,039.6	7.89	27.9	3.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	499.8	2,975.9	12,251.1	8.18	24.5	4.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	388.5	2,794.4	9,900.5	7.46	25.5	3.5	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	346.3	2,693.8	8,840.8	7.10	25.5	3.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	317.3	2,611.7	8,105.5	6.83	25.5	3.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	409.7	2,586.8	9,192.3	7.16	22.4	3.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	376.1	2,523.7	8,526.7	6.92	22.7	3.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	344.5	2,456.2	7,828.4	6.67	22.7	3.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	312.5	2,377.7	7,112.4	6.40	22.8	3.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	288.9	2,310.7	6,683.5	6.20	23.1	2.9	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	257.1	2,212.6	5,950.4	5.89	23.1	2.7	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	231.1	2,117.8	5,344.9	5.61	23.1	2.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	310.8	2,102.3	6,160.8	5.92	19.8	2.9	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	259.5	1,961.7	5,246.8	5.50	20.2	2.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	220.5	1,837.9	4,452.2	5.11	20.2	2.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	199.4	1,799.1	4,126.3	4.94	20.7	2.3	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	185.4	1,741.7	3,832.4	4.78	20.7	2.2	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	168.1	1,664.4	3,470.0	4.56	20.6	2.1	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	278.9	1,796.5	4,883.5	5.27	17.5	2.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	255.9	1,736.3	4,476.7	5.07	17.5	2.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	233.2	1,671.4	4,074.6	4.86	17.5	2.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	204.2	1,588.9	3,630.9	4.61	17.8	2.3	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	184.7	1,520.9	3,279.8	4.40	17.8	2.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	167.2	1,450.5	2,960.5	4.20	17.7	2.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	152.5	1,387.2	2,694.5	4.02	17.7	1.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	143.9	1,368.6	2,603.1	3.96	18.1	1.9	12.87	18.24	7.56	0.695	7.59



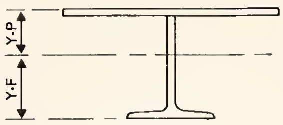
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 55 1-T	40.26	131.5	1,305.3	2,373.9	3.79	18.1	1.8	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	119.2	1,239.2	2,148.1	3.62	18.0	1.7	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	216.0	1,484.1	3,450.4	4.48	16.0	2.3	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	192.9	1,399.0	3,036.4	4.22	15.7	2.2	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	169.1	1,324.1	2,708.9	4.00	16.0	2.0	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	153.3	1,261.0	2,448.0	3.82	16.0	1.9	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	137.7	1,193.1	2,191.4	3.63	15.9	1.8	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	124.4	1,129.7	1,973.7	3.46	15.9	1.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	108.9	1,076.3	1,779.0	3.30	16.3	1.7	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	97.9	1,011.7	1,594.5	3.13	16.3	1.6	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 1-T	45.24	132.1	1,052.1	1,867.9	3.35	14.1	1.8	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	119.1	988.7	1,663.0	3.17	14.0	1.7	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	102.9	915.0	1,450.8	2.98	14.1	1.6	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	92.9	859.4	1,303.8	2.83	14.0	1.5	9.70	13.80	8.03	0.593	4.68

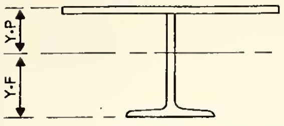


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,363.9	5,856.2	42,833.0	12.76	31.4	7.3	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,272.1	5,762.5	40,118.8	12.45	31.5	7.0	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,176.9	5,643.8	37,239.2	12.09	31.6	6.6	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,105.2	5,558.2	35,086.4	11.81	31.7	6.3	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,036.2	5,467.6	32,998.6	11.52	31.8	6.0	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	862.6	5,258.8	28,514.1	10.82	33.1	5.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	807.7	5,170.9	26,770.8	10.55	33.1	5.2	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	753.2	5,077.7	25,029.1	10.26	33.2	4.9	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	706.5	4,980.3	23,512.9	9.98	33.3	4.7	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	659.6	4,876.6	21,986.2	9.70	33.3	4.5	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,008.6	5,097.3	29,890.5	10.93	29.6	5.9	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	922.3	4,976.8	27,419.2	10.55	29.7	5.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	834.8	4,849.7	24,927.1	10.14	29.9	5.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	631.7	4,553.8	19,692.9	9.18	31.2	4.3	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	587.3	4,445.2	18,313.1	8.90	31.2	4.1	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	532.9	4,295.7	16,639.2	8.52	31.2	3.9	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	811.0	4,460.1	22,219.7	9.55	27.4	5.0	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	731.3	4,331.6	20,096.6	9.16	27.5	4.6	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	659.9	4,201.8	18,182.0	8.78	27.6	4.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	499.1	3,890.6	14,288.6	7.89	28.6	3.7	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	467.0	3,801.6	13,376.1	7.67	28.6	3.5	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	434.5	3,697.2	12,442.4	7.42	28.6	3.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	400.6	3,573.9	11,462.3	7.15	28.6	3.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	506.3	3,558.2	12,800.4	7.46	25.3	3.6	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	393.8	3,294.3	10,298.2	6.77	26.2	3.1	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	351.0	3,151.5	9,178.0	6.42	26.1	2.9	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	321.6	3,037.4	8,404.5	6.17	26.1	2.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	415.3	3,056.5	9,593.1	6.51	23.1	3.1	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	381.3	2,966.4	8,886.3	6.29	23.3	3.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	349.3	2,869.6	8,145.4	6.05	23.3	2.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	316.8	2,758.5	7,388.9	5.79	23.3	2.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	293.1	2,669.5	6,941.0	5.61	23.7	2.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	261.0	2,533.8	6,170.6	5.32	23.6	2.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	234.6	2,405.6	5,537.2	5.05	23.6	2.3	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	315.5	2,438.9	6,426.2	5.37	20.4	2.6	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	263.9	2,250.0	5,465.1	4.98	20.7	2.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	224.3	2,081.1	4,628.8	4.61	20.6	2.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	202.8	2,020.8	4,283.5	4.45	21.1	2.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	188.7	1,944.6	3,976.4	4.30	21.1	2.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	171.1	1,843.3	3,598.6	4.11	21.0	2.0	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	283.7	2,070.3	5,110.0	4.79	18.0	2.5	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	260.4	1,987.8	4,678.8	4.60	18.0	2.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	237.4	1,899.5	4,253.9	4.41	17.9	2.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	208.1	1,789.1	3,787.2	4.17	18.2	2.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	188.3	1,698.3	3,418.1	3.98	18.1	2.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	170.6	1,606.3	3,083.7	3.79	18.1	1.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	155.7	1,524.3	2,805.6	3.63	18.0	1.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	147.0	1,498.3	2,709.5	3.57	18.4	1.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	134.5	1,418.6	2,471.0	3.42	18.4	1.7	11.84	18.12	7.53	0.630	7.06



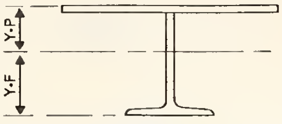
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

91.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,380.8	7,023.1	44,968.4	11.93	32.6	6.4	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,287.4	6,897.5	42,039.4	11.61	32.7	6.1	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,190.8	6,739.4	38,950.9	11.25	32.7	5.8	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,117.9	6,623.2	36,642.8	10.97	32.8	5.5	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,048.0	6,500.5	34,411.6	10.68	32.8	5.3	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	872.8	6,208.9	29,637.3	10.00	34.0	4.8	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	817.1	6,088.1	27,787.4	9.72	34.0	4.6	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	761.8	5,959.4	25,943.5	9.44	34.1	4.4	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	714.5	5,827.6	24,346.2	9.18	34.1	4.2	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	667.0	5,687.1	22,740.6	8.90	34.1	4.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,020.6	6,053.1	31,222.0	10.14	30.6	5.2	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	933.0	5,889.4	28,583.1	9.77	30.6	4.9	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	844.3	5,713.8	25,929.3	9.37	30.7	4.5	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	638.9	5,296.8	20,383.2	8.43	31.9	3.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	594.0	5,151.0	18,934.7	8.16	31.9	3.7	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	539.0	4,951.2	17,183.4	7.80	31.9	3.5	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	820.7	5,248.5	23,158.8	8.83	28.2	4.4	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	739.9	5,072.4	20,901.7	8.45	28.2	4.1	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	667.6	4,894.8	18,874.4	8.08	28.3	3.9	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	505.2	4,466.5	14,774.5	7.23	29.2	3.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	472.8	4,346.9	13,819.0	7.02	29.2	3.2	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	439.9	4,209.1	12,844.7	6.78	29.2	3.1	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	405.7	4,048.7	11,825.0	6.53	29.1	2.9	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	512.6	4,083.8	13,265.7	6.84	25.9	3.2	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	399.0	3,725.8	10,641.8	6.19	26.7	2.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	355.7	3,536.4	9,473.0	5.86	26.6	2.7	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	326.0	3,387.9	8,668.7	5.63	26.6	2.6	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	420.8	3,464.6	9,940.0	5.96	23.6	2.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	386.6	3,344.8	9,200.1	5.75	23.8	2.8	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	354.1	3,215.7	8,424.8	5.53	23.8	2.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	321.3	3,069.7	7,635.6	5.28	23.8	2.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	297.5	2,959.3	7,172.6	5.12	24.1	2.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	265.0	2,785.1	6,372.1	4.84	24.0	2.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	238.4	2,624.2	5,716.0	4.60	24.0	2.2	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	320.5	2,714.9	6,664.7	4.92	20.8	2.5	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	268.5	2,478.4	5,665.8	4.55	21.1	2.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	228.4	2,265.1	4,795.5	4.21	21.0	2.1	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	206.6	2,183.3	4,434.1	4.06	21.5	2.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	192.3	2,089.9	4,116.3	3.92	21.4	2.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	174.6	1,967.3	3,725.7	3.74	21.3	1.9	13.54	20.98	8.24	0.615	8.39



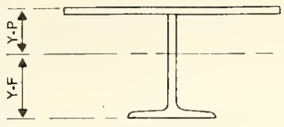
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

102.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
36 x 16 1/2 x 300 I-T	214.24	1,395.7	8,183.7	46,764.8	11.16	33.5	5.7	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,301.0	8,017.6	43,654.3	10.84	33.6	5.4	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,203.2	7,811.3	40,390.9	10.49	33.6	5.2	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,129.4	7,657.4	37,952.9	10.21	33.6	5.0	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,058.7	7,495.3	35,602.5	9.93	33.6	4.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	882.2	7,105.7	30,589.8	9.27	34.7	4.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	825.8	6,945.1	28,651.7	9.01	34.7	4.1	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	769.8	6,774.1	26,723.5	8.73	34.7	3.9	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	722.1	6,602.7	25,059.5	8.48	34.7	3.8	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	674.1	6,420.1	23,389.3	8.22	34.7	3.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,031.6	6,971.6	32,349.8	9.44	31.4	4.6	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	942.9	6,755.7	29,571.5	9.08	31.4	4.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	853.2	6,522.1	26,783.8	8.69	31.4	4.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	645.9	5,963.5	20,980.7	7.79	32.5	3.5	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	600.6	5,776.0	19,475.7	7.53	32.4	3.4	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	545.1	5,521.5	17,661.1	7.19	32.4	3.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	829.9	5,984.0	23,964.1	8.20	28.9	4.0	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	748.1	5,752.2	21,595.7	7.83	28.9	3.8	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	675.0	5,519.7	19,475.3	7.48	28.9	3.5	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	511.4	4,962.1	15,205.6	6.67	29.7	3.1	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	478.5	4,809.5	14,214.6	6.47	29.7	3.0	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	445.4	4,636.9	13,206.9	6.25	29.7	2.8	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	410.9	4,438.8	12,154.6	6.01	29.6	2.7	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	636.3	4,954.5	16,803.9	6.94	26.4	3.4	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	573.1	4,739.8	15,124.5	6.62	26.4	3.2	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	518.9	4,535.6	13,680.5	6.32	26.4	3.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	404.4	4,079.1	10,956.3	5.70	27.1	2.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	360.7	3,842.5	9,747.1	5.39	27.0	2.5	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	330.7	3,660.6	8,917.4	5.17	27.0	2.4	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	531.0	4,241.0	12,846.4	6.10	24.2	3.0	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	478.9	4,033.0	11,548.6	5.81	24.1	2.9	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	426.7	3,801.7	10,257.7	5.50	24.0	2.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	392.1	3,651.9	9,490.4	5.30	24.2	2.6	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	359.4	3,490.4	8,686.4	5.09	24.2	2.5	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	326.2	3,310.2	7,870.0	4.86	24.1	2.4	20.73	24.00	12.00	0.755	11.23
24 x 9 x 94 I-T	69.66	302.4	3,180.6	7,394.6	4.71	24.5	2.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	269.6	2,970.8	6,568.8	4.46	24.4	2.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	242.7	2,780.6	5,893.6	4.23	24.3	2.1	16.71	23.90	8.98	0.682	10.52



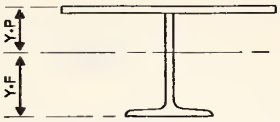
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

112.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,409.5	9,303.4	48,313.8	10.47	34.3	5.2	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,313.6	9,088.9	45,048.9	10.15	34.3	5.0	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,214.9	8,826.6	41,637.5	9.81	34.3	4.7	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,140.3	8,628.6	39,089.8	9.54	34.3	4.5	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,068.8	8,421.0	36,638.9	9.27	34.3	4.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	891.2	7,921.5	31,426.9	8.63	35.3	4.0	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	834.3	7,716.3	29,414.6	8.38	35.3	3.8	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	777.7	7,498.1	27,415.6	8.12	35.3	3.7	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	729.5	7,284.0	25,695.8	7.88	35.2	3.5	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	681.1	7,056.4	23,971.5	7.63	35.2	3.4	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,042.1	7,824.4	33,336.1	8.82	32.0	4.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	952.5	7,549.2	30,440.1	8.47	32.0	4.0	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	861.9	7,250.8	27,539.7	8.09	32.0	3.8	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	653.0	6,537.5	21,520.7	7.23	33.0	3.3	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	607.2	6,306.3	19,968.2	6.98	32.9	3.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	551.3	5,996.4	18,100.7	6.67	32.8	3.0	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	839.0	6,645.3	24,680.7	7.65	29.4	3.7	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	756.4	6,352.4	22,218.2	7.29	29.4	3.5	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	682.6	6,061.0	20,019.2	6.95	29.3	3.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	517.7	5,370.4	15,606.6	6.19	30.1	2.9	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	484.6	5,184.9	14,585.7	6.00	30.1	2.8	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	451.2	4,978.5	13,549.7	5.79	30.0	2.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	416.5	4,744.7	12,469.9	5.57	29.9	2.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	644.2	5,426.2	17,303.8	6.46	26.9	3.2	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	580.4	5,159.5	15,562.5	6.15	26.8	3.0	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	525.7	4,908.0	14,068.4	5.87	26.8	2.9	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	410.2	4,355.7	11,259.1	5.28	27.4	2.6	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	366.2	4,074.9	10,015.5	5.00	27.4	2.5	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	336.0	3,862.7	9,164.0	4.79	27.3	2.4	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	538.3	4,597.4	13,238.2	5.68	24.6	2.9	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	485.7	4,345.3	11,895.9	5.40	24.5	2.7	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	433.0	4,068.5	10,563.6	5.11	24.4	2.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	398.3	3,890.7	9,773.0	4.92	24.5	2.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	365.2	3,699.1	8,944.4	4.72	24.5	2.4	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	331.8	3,488.2	8,104.5	4.51	24.4	2.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	307.8	3,342.5	7,618.6	4.37	24.8	2.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	274.7	3,101.9	6,771.0	4.13	24.6	2.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	247.7	2,887.6	6,079.3	3.92	24.5	2.1	16.71	23.90	8.98	0.682	10.52



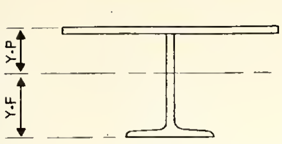
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

122.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x16 1/2 x300 1-T	214.24	1,422.7	10,354.0	49,684.2	9.84	34.9	4.8	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,325.9	10,084.5	46,286.5	9.54	34.9	4.6	58.73	36.50	16.59	1.570	32.30
260 1-T	186.30	1,226.3	9,760.0	42,748.5	9.20	34.9	4.4	54.79	36.24	16.55	1.440	30.62
245 1-T	175.31	1,151.0	9,513.1	40,106.8	8.94	34.8	4.2	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,079.0	9,255.9	37,570.1	8.68	34.8	4.1	48.56	35.88	16.47	1.260	27.44
36 x12 x194 I-T	147.66	900.3	8,639.6	32,188.5	8.08	35.8	3.7	43.43	36.48	12.12	1.260	28.08
182 1-T	138.34	842.8	8,387.0	30,112.7	7.83	35.7	3.6	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	785.7	8,119.5	28,053.1	7.58	35.7	3.5	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	737.2	7,861.7	26,285.7	7.36	35.7	3.3	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	688.4	7,588.8	24,515.1	7.12	35.6	3.2	33.79	35.84	11.97	0.940	22.40
33 x15 3/4 x240 1-T	170.91	1,052.6	8,592.0	34,226.5	8.27	32.5	4.0	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	962.2	8,253.2	31,229.6	7.93	32.5	3.8	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	870.8	7,886.1	28,232.7	7.57	32.4	3.6	42.21	33.00	15.57	1.150	23.59
33 x11 1/2 x152 1-T	114.31	660.4	7,014.0	22,028.9	6.75	33.4	3.1	33.62	33.50	11.56	1.055	21.27
141 I-T	106.32	614.3	6,739.9	20,435.5	6.52	33.3	3.0	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	558.0	6,376.9	18,522.5	6.22	33.2	2.9	29.15	33.10	11.51	0.855	19.19
30 x15 x210 1-T	148.40	848.4	7,220.8	25,341.3	7.16	29.9	3.5	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	765.1	6,864.8	22,798.0	6.82	29.8	3.3	39.48	30.12	15.04	1.185	21.38
172 1-T	121.81	690.6	6,513.9	20,531.3	6.50	29.7	3.2	35.83	29.88	14.98	1.065	19.57
30 x10 1/2 x132 I-T	99.55	524.6	5,694.3	15,995.9	5.78	30.5	2.8	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	491.2	5,478.1	14,949.0	5.60	30.4	2.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	457.6	5,240.8	13,888.6	5.40	30.3	2.7	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	422.6	4,975.2	12,784.8	5.19	30.3	2.6	24.38	29.82	10.48	0.760	16.34
27 x14 x177 1-T	124.95	652.6	5,818.6	17,779.1	6.04	27.2	3.1	36.75	27.30	14.09	1.190	19.79
160 1-T	112.61	588.2	5,501.0	15,984.2	5.75	27.2	2.9	33.12	27.08	14.02	1.075	17.81
145 1-T	102.05	533.0	5,204.2	14,446.6	5.49	27.1	2.8	30.01	26.88	13.96	0.975	16.12
27 x10 x114 1-T	85.05	416.8	4,564.3	11,563.5	4.93	27.7	2.5	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	372.3	4,244.9	10,289.7	4.67	27.6	2.4	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	341.9	4,007.1	9,419.2	4.47	27.5	2.4	20.75	26.90	9.99	0.747	13.18
24 x14 x160 1-T	109.94	546.3	4,884.2	13,620.3	5.31	24.9	2.8	32.33	24.72	14.09	1.135	16.21
145 1-T	99.74	493.2	4,590.9	12,239.3	5.05	24.8	2.7	29.34	24.48	14.04	1.020	14.88
130 1-T	89.83	440.2	4,273.0	10,870.9	4.78	24.7	2.5	26.42	24.24	14.00	0.900	13.70
24 x12 x120 1-T	84.70	405.2	4,070.6	10,059.9	4.60	24.8	2.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	371.8	3,852.7	9,209.8	4.41	24.8	2.4	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	338.2	3,615.7	8,349.2	4.21	24.7	2.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	314.1	3,457.5	7,854.1	4.09	25.0	2.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	280.7	3,192.3	6,987.1	3.86	24.9	2.2	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	253.5	2,959.3	6,280.7	3.67	24.8	2.1	16.71	23.90	8.98	0.682	10.52



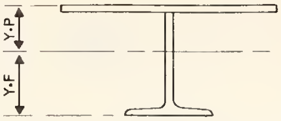
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

50t

132.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 1-T	214.24	1,435.8	11,315.0	50,928.1	9.28	35.5	4.5	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,338.1	10,985.7	47,415.0	8.99	35.4	4.3	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,237.8	10,595.5	43,767.1	8.67	35.4	4.1	54.79	36.24	16.55	1.440	30.62
245 1 T	175.31	1,161.9	10,296.9	41,043.8	8.41	35.3	4.0	51.56	36.06	16.51	1.350	28.92
230 1-T	165.10	1,089.3	9,987.9	38,432.5	8.16	35.3	3.8	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 1-T	147.66	909.6	9,253.3	32,904.3	7.59	36.2	3.6	43.43	36.48	12.12	1.260	28.08
182 1-T	138.34	851.7	8,952.9	30,773.2	7.36	36.1	3.4	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	794.1	8,636.5	28,660.9	7.12	36.1	3.3	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	745.3	8,336.3	26,852.0	6.90	36.0	3.2	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	696.2	8,019.9	25,041.0	6.68	36.0	3.1	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	1,063.4	9,264.1	35,055.0	7.79	33.0	3.8	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	972.3	8,860.1	31,970.3	7.46	32.9	3.6	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	880.2	8,424.1	28,889.4	7.12	32.8	3.4	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	668.3	7,397.1	22,524.3	6.33	33.7	3.0	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	621.9	7,082.8	20,895.1	6.11	33.6	3.0	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	565.3	6,671.5	18,942.3	5.83	33.5	2.8	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 1-T	148.40	858.2	7,707.6	25,970.7	6.74	30.3	3.4	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	774.3	7,289.7	23,356.7	6.41	30.2	3.2	39.48	30.12	15.04	1.185	21.38
172 1-T	121.81	699.3	6,881.7	21,030.8	6.11	30.1	3.1	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	532.2	5,943.6	16,387.4	5.42	30.8	2.8	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	498.6	5,700.1	15,317.6	5.25	30.7	2.7	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	464.7	5,436.0	14,235.5	5.07	30.6	2.6	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	429.6	5,143.5	13,110.6	4.87	30.5	2.5	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 1-T	124.95	661.7	6,136.4	18,246.8	5.68	27.6	3.0	36.75	27.30	14.09	1.190	19.79
160 1-T	112.61	596.8	5,771.4	16,404.7	5.41	27.5	2.8	33.12	27.08	14.02	1.075	17.81
145 1-T	102.05	541.2	5,433.6	14,828.7	5.15	27.4	2.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	424.1	4,717.8	11,880.1	4.63	28.0	2.5	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	379.4	4,366.3	10,579.3	4.38	27.9	2.4	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	348.7	4,107.9	9,691.7	4.20	27.8	2.4	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	555.2	5,109.4	14,006.2	5.00	25.2	2.7	32.33	24.72	14.09	1.135	16.21
145 1-T	99.74	501.7	4,779.8	12,590.8	4.75	25.1	2.6	29.34	24.48	14.04	1.020	14.88
130 1-T	89.83	448.3	4,426.6	11,190.3	4.49	25.0	2.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	413.0	4,203.7	10,361.1	4.33	25.1	2.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	379.4	3,964.1	9,491.5	4.15	25.0	2.4	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	345.5	3,706.4	8,612.4	3.96	24.9	2.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	321.3	3,538.9	8,109.1	3.84	25.2	2.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	287.7	3,255.0	7,224.5	3.64	25.1	2.2	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	260.3	3,008.7	6,504.7	3.46	25.0	2.2	16.71	23.90	8.98	0.682	10.52



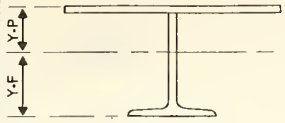
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

50t

142.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,449.2	12,174.1	52,085.4	8.78	35.9	4.3	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,350.7	11,782.7	48,470.7	8.50	35.9	4.1	58.73	36.50	16.59	1.570	32.30
260 1-T	186.30	1,249.7	11,325.5	44,726.2	8.19	35.8	3.9	54.79	36.24	16.55	1.440	30.62
245 1-T	175.31	1,173.3	10,974.5	41,931.2	7.95	35.7	3.8	51.56	36.06	16.51	1.350	28.92
230 1-T	165.10	1,100.1	10,614.0	39,254.3	7.71	35.7	3.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 1-T	147.66	919.5	9,764.2	33,597.1	7.16	36.5	3.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	861.1	9,417.8	31,417.2	6.94	36.5	3.3	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	803.2	9,054.9	29,258.2	6.71	36.4	3.2	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	754.0	8,715.3	27,412.5	6.50	36.4	3.1	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	704.6	8,359.2	25,565.8	6.29	36.3	3.1	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	1,074.7	9,838.6	35,847.8	7.35	33.4	3.6	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	983.0	9,370.7	32,685.5	7.04	33.3	3.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	890.3	8,868.3	29,530.4	6.72	33.2	3.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	676.9	7,697.0	23,022.2	5.97	34.0	3.0	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	630.3	7,346.8	21,361.1	5.76	33.9	2.9	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	573.3	6,893.5	19,372.6	5.49	33.8	2.8	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 1-T	148.40	868.9	8,110.0	26,588.3	6.37	30.6	3.3	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	784.3	7,633.9	23,911.3	6.06	30.5	3.1	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	708.8	7,173.5	21,532.6	5.76	30.4	3.0	35.83	29.88	14.98	1.065	19.57
30 x 101/2 x 132 1-T	99.55	540.6	6,130.9	16,792.8	5.12	31.1	2.7	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	506.8	5,864.3	15,702.3	4.95	31.0	2.7	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	472.8	5,578.1	14,600.7	4.78	30.9	2.6	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	437.4	5,264.0	13,456.6	4.60	30.8	2.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 1-T	124.95	671.7	6,388.6	18,720.9	5.37	27.9	2.9	36.75	27.30	14.09	1.190	19.79
160 1-T	112.61	606.4	5,981.5	16,836.3	5.11	27.8	2.8	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	550.4	5,608.2	15,225.8	4.87	27.7	2.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	432.5	4,829.5	12,217.9	4.38	28.3	2.5	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	387.4	4,452.6	10,892.6	4.14	28.1	2.4	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	356.6	4,178.7	9,989.3	3.97	28.0	2.4	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 1-T	109.94	565.1	5,284.2	14,407.0	4.73	25.5	2.7	32.33	24.72	14.09	1.135	16.21
145 1-T	99.74	511.3	4,923.8	12,960.5	4.49	25.3	2.6	29.34	24.48	14.04	1.020	14.88
130 1-T	89.83	457.6	4,541.7	11,530.8	4.25	25.2	2.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	422.1	4,302.4	10,685.1	4.09	25.3	2.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	388.2	4,045.9	9,797.8	3.93	25.2	2.4	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	354.1	3,772.4	8,901.5	3.75	25.1	2.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	329.7	3,598.6	8,390.7	3.64	25.4	2.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	295.9	3,301.5	7,489.8	3.45	25.3	2.3	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	268.4	3,046.3	6,757.6	3.28	25.2	2.2	16.71	23.90	8.98	0.682	10.52



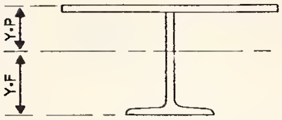
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 11 3/4 x 105 I-T	71.22	65.6	157.3	853.9	6.29	5.4	13.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	60.2	144.1	776.8	6.27	5.4	12.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	61.2	125.3	758.3	6.42	6.1	12.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	55.5	114.2	682.8	6.41	6.0	12.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	50.8	103.7	618.0	6.38	6.0	12.2	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	46.9	95.2	565.3	6.37	5.9	12.1	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	48.1	88.9	572.9	6.52	6.4	11.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	44.6	81.3	525.4	6.49	6.5	11.8	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	41.1	74.0	479.1	6.49	6.5	11.7	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	49.7	102.7	551.0	5.73	5.4	11.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	45.5	93.6	498.3	5.70	5.3	11.0	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	41.3	84.6	447.7	5.68	5.3	10.8	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	38.0	76.8	406.1	5.67	5.3	10.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	36.7	67.3	388.3	5.87	5.8	10.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	33.5	60.7	350.8	5.86	5.8	10.5	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	30.4	54.5	314.7	5.87	5.8	10.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	28.5	48.2	286.2	5.84	5.9	10.0	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	30.2	64.2	289.1	5.05	4.5	9.6	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	27.9	58.5	263.3	5.05	4.5	9.4	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	25.6	52.6	237.9	5.05	4.5	9.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	25.3	46.3	232.9	5.21	5.0	9.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	23.3	41.5	210.8	5.21	5.1	9.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	21.5	36.3	189.0	5.20	5.2	8.8	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	35.3	93.0	352.5	4.50	3.8	10.0	16.77	13.64	10.07	0.932	7.77
51 T	51.03	35.6	92.5	351.3	4.74	3.8	9.9	15.01	13.53	10.02	0.827	7.01
47 T	47.02	30.8	77.9	299.4	4.55	3.8	9.7	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	28.8	91.3	269.2	3.84	2.9	9.3	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	26.6	69.8	236.7	4.05	3.4	8.9	13.81	12.15	9.06	0.872	6.26
42 T	41.99	24.6	63.2	215.4	4.07	3.4	8.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	23.2	57.3	199.1	4.11	3.5	8.6	11.18	11.95	8.98	0.686	5.26
12 x 8 x 50 I-T	33.81	24.4	53.6	206.5	4.42	3.9	8.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	22.4	48.5	186.5	4.42	3.8	8.3	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	20.3	43.8	167.6	4.43	3.8	8.2	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	20.2	39.0	164.4	4.54	4.2	8.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	18.0	34.0	143.8	4.56	4.2	8.0	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	16.5	29.9	128.3	4.57	4.3	7.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	16.8	23.2	121.0	4.66	5.2	7.2	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	15.3	19.9	106.3	4.63	5.3	7.0	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	14.1	16.8	92.7	4.55	5.5	6.6	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	12.9	14.5	81.8	4.57	5.7	6.4	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	11.4	12.0	70.8	4.58	5.9	6.2	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	19.3	48.9	148.7	3.62	3.0	7.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	18.4	46.0	140.8	3.64	3.1	7.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	17.4	42.2	130.7	3.66	3.1	7.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	14.1	30.0	94.8	3.66	3.2	6.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	14.5	26.8	97.1	3.86	3.6	6.7	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	13.0	23.3	85.1	3.87	3.7	6.6	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	11.8	19.3	73.5	3.84	3.8	6.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	12.5	17.4	75.3	3.96	4.3	6.0	4.18	10.24	4.02	0.394	2.56



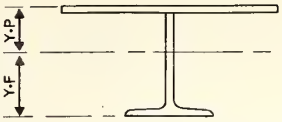
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 4 x 17 1-T	12.81	11.6	15.2	67.5	3.92	4.4	5.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	10.9	13.2	60.3	3.87	4.6	5.6	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	9.5	10.4	49.5	3.90	4.8	5.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	8.2	9.0	43.4	3.94	5.3	4.8	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	17.7	60.1	126.8	2.81	2.1	7.2	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	15.4	44.7	105.6	2.97	2.4	6.8	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	14.1	35.5	93.5	3.15	2.6	6.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	13.4	33.0	87.7	3.17	2.7	6.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	12.6	30.4	81.5	3.20	2.7	6.4	7.35	9.00	7.50	0.570	3.22
8 x 7 x 25 T	24.99	11.1	27.3	65.0	2.86	2.4	5.9	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	10.4	24.9	60.1	2.88	2.4	5.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	9.7	22.8	55.2	2.91	2.4	5.7	5.88	8.00	7.00	0.503	2.45
18 T	18.36	9.3	20.3	51.5	2.92	2.5	5.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	10.3	21.1	56.7	3.06	2.7	5.5	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	9.3	18.5	49.9	3.08	2.7	5.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	9.2	15.4	47.5	3.19	3.1	5.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	8.4	13.0	41.5	3.18	3.2	4.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	8.5	11.2	39.9	3.20	3.6	4.7	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	7.9	9.6	35.1	3.17	3.7	4.5	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	7.0	7.8	29.5	3.24	3.8	4.2	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.0	6.2	22.5	3.24	4.5	3.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	8.0	19.1	40.4	2.55	2.1	5.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	7.6	17.6	38.0	2.60	2.2	5.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	7.3	15.5	35.0	2.64	2.3	4.8	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	5.9	7.8	24.1	2.76	3.1	4.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	3.8	5.0	15.4	2.86	4.0	3.1	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	6.5	16.2	28.8	2.21	1.8	4.5	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	6.0	14.4	26.1	2.24	1.8	4.4	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	5.7	12.9	24.0	2.28	1.9	4.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	6.3	9.6	24.2	2.50	2.5	3.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	5.8	9.6	22.7	2.43	2.4	3.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	5.5	8.2	20.4	2.44	2.5	3.7	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	5.4	7.0	18.7	2.45	2.7	3.5	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	5.2	6.9	18.2	2.44	2.6	3.5	2.43	6.00	4.00	0.269	1.38
7 T	7.04	4.9	6.0	16.4	2.47	2.7	3.3	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	4.7	5.1	14.5	2.46	2.8	3.1	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	4.7	4.9	14.6	2.50	3.0	3.1	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	2.7	4.0	9.9	2.48	3.6	2.5	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	4.8	11.2	17.6	1.90	1.6	3.7	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	4.5	9.9	16.0	1.93	1.6	3.6	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	4.3	8.4	14.4	1.97	1.7	3.4	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	4.4	7.3	14.5	2.06	2.0	3.3	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	4.3	6.4	13.3	2.07	2.1	3.1	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	4.1	5.5	12.1	2.07	2.2	2.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	3.7	4.4	10.2	2.10	2.3	2.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.3	3.6	8.7	2.12	2.7	2.5	1.32	5.00	2.68	0.204	0.77



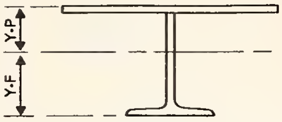
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 4 x 7.5 T	7.55	3.2	4.8	8.0	1.68	1.7	2.5	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	3.1	4.1	7.2	1.69	1.8	2.3	1.91	4.00	4.00	0.254	0.92
5 T	5.03	2.8	3.3	6.2	1.72	1.9	2.2	1.48	3.95	3.94	0.204	0.67
4 x 21/4 x 3.25T	3.26	2.0	2.6	4.7	1.73	2.3	1.8	0.96	4.00	2.28	0.189	0.54
31/2 x 21/8 x 2.75T	2.74	1.6	2.2	3.3	1.53	2.1	1.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 6 T	6.02	2.2	3.0	3.9	1.28	1.3	1.8	1.77	3.00	4.00	0.279	0.69
4.25T	4.25	2.0	2.2	3.2	1.30	1.4	1.6	1.25	2.92	3.94	0.194	0.49
3 x 17/8 x 2.2 T	2.21	1.1	1.8	2.2	1.30	1.9	1.2	0.65	3.00	1.84	0.167	0.34



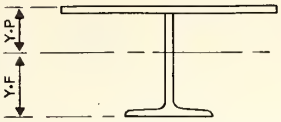
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 11 3/4 x 105 I-T	71.22	71.0	161.9	911.8	6.45	5.6	12.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	65.6	148.4	833.4	6.44	5.6	12.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	66.5	129.0	810.6	6.58	6.3	12.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	60.8	117.8	734.2	6.57	6.2	12.1	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	56.0	107.2	668.2	6.56	6.2	11.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	52.1	98.7	614.4	6.56	6.2	11.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	53.3	92.1	621.0	6.70	6.7	11.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	49.8	84.3	572.3	6.68	6.8	11.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	46.3	77.0	524.8	6.69	6.8	11.3	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	54.4	106.1	592.8	5.88	5.6	10.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	50.1	96.8	539.0	5.86	5.6	10.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	46.0	87.7	487.4	5.86	5.6	10.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	42.6	79.8	444.7	5.86	5.6	10.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	41.3	70.0	426.1	6.05	6.1	10.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	38.2	63.3	387.5	6.06	6.1	10.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	35.1	56.9	350.5	6.08	6.2	10.0	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	33.1	50.5	319.7	6.04	6.3	9.7	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	34.4	66.8	319.9	5.23	4.8	9.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	32.0	61.0	293.1	5.24	4.8	9.1	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	29.7	55.0	266.7	5.25	4.9	9.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	29.4	48.5	261.2	5.41	5.4	8.9	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	27.4	43.5	238.0	5.41	5.5	8.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	25.6	38.1	214.4	5.40	5.6	8.4	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	39.4	97.0	386.3	4.67	4.0	9.8	16.77	13.64	10.07	0.932	7.77
51 T	51.03	39.7	95.8	384.2	4.90	4.0	9.7	15.01	13.53	10.02	0.827	7.01
47 T	47.02	34.8	81.4	331.5	4.73	4.1	9.5	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	32.5	95.7	298.8	4.01	3.1	9.2	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	30.2	73.2	263.4	4.22	3.6	8.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	28.2	66.3	241.3	4.26	3.6	8.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	26.7	60.2	224.0	4.29	3.7	8.4	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	28.0	55.9	230.5	4.59	4.1	8.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	26.0	50.7	209.8	4.60	4.1	8.1	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	23.9	45.8	190.2	4.63	4.1	7.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	23.8	40.9	186.4	4.74	4.6	7.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	21.6	35.8	164.8	4.76	4.6	7.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	20.0	31.4	148.1	4.77	4.7	7.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	20.2	24.5	137.9	4.83	5.6	6.8	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	18.7	21.1	121.9	4.79	5.8	6.5	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	17.3	17.8	106.7	4.70	6.0	6.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	15.3	16.1	94.7	4.71	6.2	5.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	12.8	14.6	83.0	4.72	6.5	5.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	22.5	51.5	168.6	3.80	3.3	7.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	21.6	48.5	160.3	3.82	3.3	7.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	20.5	44.5	149.6	3.85	3.4	7.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	17.1	31.6	109.6	3.84	3.5	6.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	17.5	28.2	111.9	4.04	4.0	6.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	16.0	24.6	99.1	4.05	4.0	6.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	14.7	20.4	86.0	4.02	4.2	5.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	15.4	18.4	87.1	4.11	4.7	5.7	4.18	10.24	4.02	0.394	2.56



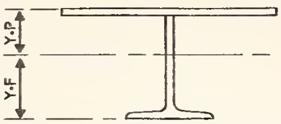
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
10 x 4 x 17 1-T	12.81	14.5	16.1	78.3	4.06	4.9	5.4	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	13.6	14.0	70.1	4.01	5.0	5.1	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	11.0	12.2	58.1	4.02	5.3	4.8	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	8.7	11.7	50.6	4.01	5.8	4.3	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	20.4	63.8	144.2	2.97	2.3	7.1	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	18.2	47.4	121.3	3.14	2.6	6.7	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	16.9	37.7	108.0	3.32	2.9	6.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	16.1	35.0	101.9	3.35	2.9	6.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	15.3	32.3	95.2	3.38	3.0	6.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	16.2	42.0	97.0	2.79	2.3	6.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	15.2	39.0	90.3	2.81	2.3	5.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	14.4	36.0	83.8	2.84	2.3	5.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	13.6	33.4	78.3	2.87	2.3	5.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	13.5	29.1	76.5	3.03	2.6	5.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	12.8	26.6	71.1	3.06	2.7	5.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	12.1	24.3	65.9	3.10	2.7	5.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	11.7	21.7	61.4	3.11	2.8	5.3	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	12.7	22.3	66.6	3.23	3.0	5.2	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	11.7	19.5	59.2	3.25	3.0	5.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	11.6	16.3	56.1	3.35	3.4	4.9	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	10.8	13.8	49.2	3.33	3.6	4.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	10.8	11.9	46.9	3.33	3.9	4.3	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	10.1	10.2	41.4	3.28	4.1	4.1	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	8.2	9.2	35.0	3.33	4.3	3.8	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.51-T	5.19	5.3	8.3	26.5	3.26	5.0	3.2	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	10.1	20.5	48.8	2.73	2.4	4.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	9.8	18.8	46.0	2.77	2.4	4.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	9.4	16.5	42.4	2.81	2.6	4.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	7.9	8.4	29.2	2.89	3.5	3.7	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.0	6.9	18.1	2.85	4.5	2.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	8.3	17.4	35.3	2.38	2.0	4.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	7.8	15.5	32.2	2.41	2.1	4.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	7.5	13.8	29.8	2.45	2.2	4.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	8.1	10.1	28.8	2.61	2.8	3.6	3.26	6.24	4.03	0.404	1.62
11 T	11.02	7.6	10.2	27.6	2.56	2.7	3.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	7.3	8.8	24.7	2.56	2.8	3.4	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	7.1	7.5	22.4	2.54	3.0	3.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	6.9	7.3	22.0	2.54	3.0	3.2	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.3	6.6	19.8	2.55	3.1	3.0	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	5.4	6.3	17.5	2.52	3.2	2.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.2	6.4	17.5	2.55	3.4	2.8	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	6.4	12.1	21.9	2.05	1.8	3.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	6.0	10.7	20.0	2.08	1.9	3.3	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	5.8	8.9	18.0	2.10	2.0	3.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	6.0	7.8	17.8	2.17	2.3	3.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	5.8	6.8	16.3	2.17	2.4	2.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	5.6	5.9	14.7	2.16	2.5	2.6	2.20	5.00	4.00	0.269	1.15



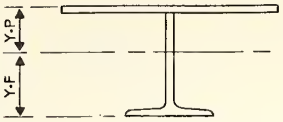
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 4 x 5.75 T	5.75	4.6	5.2	12.5	2.16	2.7	2.4	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.5	5.0	10.5	2.14	3.0	2.1	1.32	5.00	2.68	0.204	0.77
4 x 4 x 7.5 T	7.55	4.4	5.1	9.9	1.77	2.0	2.3	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.2	4.3	8.9	1.76	2.1	2.1	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.5	4.0	7.7	1.77	2.2	1.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.1	3.7	5.6	1.71	2.6	1.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.6	3.2	4.0	1.49	2.4	1.3	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	3.3	4.3	6.1	1.35	1.4	1.9	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.0	3.2	4.9	1.34	1.5	1.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.4	2.8	3.9	1.33	1.7	1.4	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	2.6	2.5	1.25	2.2	1.0	0.65	3.00	1.84	0.167	0.34



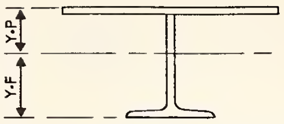
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
21 x 9 x 96 I-T	70.15	96.3	167.7	1,304.8	7.69	7.8	13.5	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	84.6	144.1	1,122.4	7.68	7.8	13.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	80.9	131.1	1,072.1	7.88	8.2	13.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	76.9	122.6	1,007.0	7.88	8.2	13.1	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	72.0	111.7	926.8	7.87	8.3	12.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	74.2	166.3	928.8	6.29	5.6	12.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	83.4	180.6	1,065.4	6.64	5.9	12.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	77.8	167.0	982.6	6.63	5.9	12.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	72.4	153.4	902.6	6.63	5.9	12.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	73.2	133.2	874.3	6.75	6.6	11.9	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	67.4	121.9	796.6	6.76	6.5	11.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	62.7	111.1	728.7	6.76	6.6	11.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	58.7	102.3	673.5	6.77	6.6	11.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	59.9	95.6	678.6	6.89	7.1	11.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	56.4	87.7	628.2	6.88	7.2	11.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	52.8	80.1	579.1	6.90	7.2	11.0	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	60.4	109.8	643.4	6.05	5.9	10.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	56.1	100.4	588.2	6.04	5.9	10.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	51.9	91.1	535.1	6.04	5.9	10.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	48.4	83.0	490.9	6.05	5.9	10.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	47.3	72.9	470.9	6.25	6.5	10.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	44.1	66.0	430.8	6.26	6.5	9.8	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	40.9	59.5	392.3	6.29	6.6	9.6	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	38.8	52.8	358.5	6.25	6.8	9.2	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	46.3	96.4	449.7	5.32	4.7	9.7	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	43.5	87.2	416.6	5.32	4.8	9.6	13.31	14.16	10.04	0.718	5.87
14 x 8 x 53 I-T	36.44	39.6	69.5	356.4	5.42	5.1	9.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	37.2	63.5	328.3	5.44	5.2	8.8	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	34.8	57.3	300.5	5.45	5.2	8.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	34.6	50.7	294.1	5.60	5.8	8.5	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	32.5	45.5	269.3	5.61	5.9	8.3	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	30.6	39.9	243.5	5.59	6.1	7.9	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	34.8	76.8	295.6	4.41	3.8	8.5	13.81	12.15	9.06	0.872	6.26
42 T	41.99	32.7	69.6	272.3	4.45	3.9	8.3	12.35	12.04	9.01	0.772	5.65
38 T	38.01	31.2	63.2	253.6	4.49	4.0	8.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	32.6	58.3	258.8	4.77	4.4	7.9	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	30.5	52.9	237.1	4.79	4.5	7.8	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	28.5	47.9	216.5	4.82	4.5	7.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	28.3	42.8	212.0	4.92	4.9	7.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	26.1	37.5	188.8	4.95	5.0	7.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	24.5	32.9	170.4	4.95	5.2	7.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	24.6	25.7	156.8	4.97	6.1	6.4	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	22.1	22.9	139.1	4.92	6.3	6.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	18.7	21.5	121.8	4.81	6.5	5.7	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	16.1	20.2	108.4	4.80	6.7	5.4	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	13.5	18.7	95.6	4.79	7.1	5.1	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	26.5	54.3	192.4	3.98	3.5	7.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	25.6	51.1	183.5	4.01	3.6	7.2	10.01	10.57	8.27	0.685	4.54
31 T	31.01	24.5	46.9	171.8	4.04	3.7	7.0	9.12	10.49	8.24	0.615	4.19

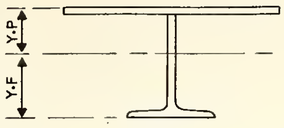


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 8 x 45 I-T	29.46	24.3	44.7	162.1	4.01	3.6	6.7	8.66	10.12	8.02	0.618	3.54
33 1-T	21.93	20.8	33.0	126.6	4.01	3.8	6.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	21.3	29.6	128.8	4.20	4.4	6.1	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	19.7	25.8	114.8	4.21	4.5	5.8	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	18.4	21.4	99.7	4.16	4.7	5.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	19.0	19.3	99.9	4.23	5.2	5.2	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	16.9	18.0	89.9	4.17	5.3	5.0	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	14.7	17.1	80.6	4.09	5.5	4.7	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	11.6	15.6	66.9	4.07	5.8	4.3	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.1	15.1	57.7	4.01	6.4	3.8	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	21.6	50.3	140.1	3.32	2.8	6.5	11.32	9.08	8.79	0.831	4.31
35 T	34.95	20.6	46.5	131.3	3.35	2.8	6.4	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	20.3	39.8	125.2	3.50	3.1	6.2	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	19.6	37.0	118.4	3.53	3.2	6.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	18.8	34.1	111.2	3.56	3.3	5.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	19.2	44.6	112.2	2.95	2.5	5.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	18.3	41.4	105.0	2.98	2.5	5.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	17.4	38.3	98.0	3.01	2.6	5.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	16.7	35.4	92.0	3.04	2.6	5.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	16.6	30.8	89.7	3.20	2.9	5.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	15.9	28.2	83.8	3.23	3.0	5.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	15.1	25.7	78.0	3.27	3.0	5.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	14.7	22.9	72.7	3.27	3.2	4.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	15.8	23.4	77.8	3.37	3.3	4.9	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	14.7	20.4	69.4	3.39	3.4	4.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	14.6	17.1	65.5	3.47	3.8	4.5	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	13.7	14.4	57.6	3.43	4.0	4.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	12.5	13.7	54.3	3.41	4.3	4.0	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	10.7	12.9	47.9	3.34	4.5	3.7	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	8.6	12.0	40.5	3.35	4.7	3.4	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.51-T	5.19	5.6	11.0	30.2	3.21	5.4	2.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	12.8	21.7	58.3	2.89	2.7	4.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	12.4	19.8	54.9	2.93	2.8	4.4	5.00	7.00	6.75	0.453	2.00
15 T	14.99	12.0	17.4	50.6	2.95	2.9	4.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	8.9	10.4	34.4	2.95	3.9	3.3	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.2	9.2	20.6	2.78	4.9	2.2	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	10.7	18.5	42.7	2.52	2.3	4.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	10.2	16.4	39.0	2.56	2.4	3.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	9.8	14.5	36.1	2.59	2.5	3.7	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	10.4	10.6	33.8	2.69	3.2	3.3	3.26	6.24	4.03	0.404	1.62
11 T	11.02	9.9	10.8	32.7	2.65	3.0	3.3	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.2	9.5	29.3	2.63	3.2	3.1	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	7.8	9.3	26.2	2.59	3.4	2.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	7.7	9.1	25.8	2.59	3.4	2.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.6	8.8	23.2	2.58	3.5	2.6	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	5.6	8.4	20.3	2.52	3.6	2.4	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.4	8.5	20.4	2.55	3.8	2.4	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.0	7.6	13.2	2.34	4.4	1.7	0.99	6.00	1.84	0.188	0.68



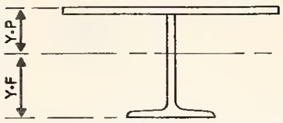
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	8.3	12.8	26.7	2.17	2.1	3.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	8.0	11.3	24.4	2.19	2.2	3.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	7.7	9.4	21.7	2.19	2.3	2.8	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	7.8	8.2	21.3	2.25	2.6	2.7	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.1	7.6	19.3	2.23	2.7	2.5	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.2	7.4	17.4	2.19	2.8	2.4	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.8	6.9	14.6	2.17	3.0	2.1	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.6	6.7	12.1	2.11	3.4	1.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	6.1	7.5	14.3	1.81	1.9	2.3	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	5.9	6.3	12.8	1.81	2.0	2.2	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.3	5.9	11.9	1.81	2.2	2.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.5	5.7	10.5	1.78	2.3	1.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.7	5.4	9.0	1.77	2.5	1.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.2	5.1	6.4	1.65	2.9	1.3	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	4.3	4.5	1.42	2.6	1.0	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.4	4.6	7.4	1.40	1.6	1.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.4	4.1	5.9	1.36	1.7	1.4	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.4	3.8	4.6	1.32	1.9	1.2	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	3.5	2.8	1.17	2.4	0.8	0.65	3.00	1.84	0.167	0.34



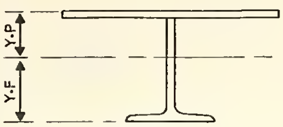
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
21 x 9 x 96 I-T	70.15	105.1	172.5	1,394.7	7.86	8.1	13.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	93.3	148.7	1,208.3	7.87	8.1	13.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	89.7	135.3	1,157.6	8.07	8.6	12.9	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	85.7	126.6	1,090.3	8.07	8.6	12.7	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	80.7	115.6	1,007.1	8.07	8.7	12.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	81.8	172.0	1,005.7	6.47	5.8	12.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	91.3	186.0	1,145.4	6.81	6.2	12.5	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	85.7	172.1	1,060.7	6.81	6.2	12.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	80.2	158.3	978.6	6.82	6.2	12.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	80.9	137.5	943.9	6.93	6.9	11.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	75.1	125.9	864.5	6.94	6.9	11.5	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	70.3	114.9	794.4	6.95	6.9	11.3	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	66.3	105.9	737.1	6.96	7.0	11.1	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	67.5	98.9	740.7	7.08	7.5	11.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	63.9	90.9	688.1	7.07	7.6	10.8	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	60.3	83.1	636.9	7.09	7.7	10.6	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	67.3	113.5	698.6	6.21	6.2	10.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	62.9	103.9	641.7	6.21	6.2	10.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	58.6	94.3	586.6	6.22	6.2	10.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	55.2	86.1	540.5	6.23	6.3	9.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	54.0	75.6	518.6	6.42	6.9	9.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	50.8	68.5	476.6	6.43	7.0	9.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	47.6	61.8	436.1	6.47	7.1	9.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	45.4	54.8	399.0	6.41	7.3	8.8	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	45.6	72.1	395.3	5.59	5.5	8.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	43.2	65.9	365.5	5.61	5.5	8.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	40.7	59.4	335.9	5.62	5.7	8.2	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	40.5	52.6	328.4	5.77	6.2	8.1	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	38.4	47.3	301.6	5.77	6.4	7.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	36.4	41.5	273.1	5.74	6.6	7.5	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	38.4	71.5	309.7	4.89	4.3	8.1	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	36.7	65.2	288.3	4.89	4.4	7.9	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	40.1	80.2	330.5	4.58	4.1	8.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	37.9	72.7	305.7	4.63	4.2	8.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	36.4	66.0	285.4	4.67	4.3	7.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	37.9	60.5	288.9	4.94	4.8	7.6	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	35.7	54.9	265.8	4.95	4.8	7.4	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	33.6	49.7	243.9	4.98	4.9	7.2	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	33.5	44.5	238.4	5.08	5.4	7.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	31.3	38.9	213.3	5.09	5.5	6.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	29.6	34.2	192.9	5.09	5.6	6.5	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	26.7	29.5	175.6	5.06	6.6	5.9	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	23.0	27.8	156.0	4.99	6.8	5.6	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	19.5	26.2	136.4	4.86	7.0	5.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	16.8	24.8	121.3	4.82	7.2	4.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	14.1	23.3	107.1	4.79	7.6	4.6	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	31.1	56.8	217.6	4.15	3.8	7.0	10.73	10.62	8.29	0.740	4.83
34 T	34.03	30.2	53.5	208.0	4.18	3.9	6.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	29.0	49.1	195.3	4.21	4.0	6.7	9.12	10.49	8.24	0.615	4.19



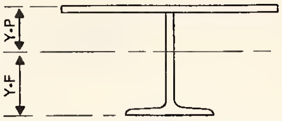
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 8 x 33 I-T	21.93	25.0	34.3	144.0	4.15	4.2	5.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	25.6	30.8	145.9	4.33	4.7	5.7	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	24.0	26.8	130.4	4.32	4.9	5.4	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	22.2	22.5	113.2	4.25	5.1	5.0	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	20.1	23.2	112.5	4.30	5.6	4.8	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	17.6	22.1	101.2	4.22	5.8	4.6	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	15.3	21.1	90.5	4.13	5.9	4.3	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	12.0	19.5	74.9	4.06	6.2	3.8	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.4	18.9	64.0	3.96	6.8	3.4	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	25.6	52.8	160.2	3.48	3.0	6.3	11.32	9.08	8.79	0.831	4.31
35 T	34.95	24.6	48.9	150.7	3.51	3.1	6.1	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	24.2	41.8	143.3	3.65	3.4	5.9	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	23.5	38.8	135.7	3.68	3.5	5.8	8.09	9.06	7.53	0.630	3.53
25 T	24.99	22.7	35.7	127.7	3.71	3.6	5.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	22.8	47.0	128.5	3.10	2.7	5.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	21.8	43.6	120.7	3.13	2.8	5.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	20.9	40.2	113.1	3.16	2.8	5.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	20.1	37.2	106.5	3.19	2.9	5.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	20.1	32.3	103.5	3.34	3.2	5.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	19.4	29.5	96.8	3.37	3.3	5.0	6.62	8.06	7.04	0.563	2.78
20 T	19.99	18.6	26.9	90.4	3.40	3.4	4.9	5.88	8.00	7.00	0.503	2.45
18 T	18.36	18.1	24.0	84.0	3.39	3.5	4.6	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	19.2	24.4	89.0	3.48	3.7	4.6	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	18.2	21.2	79.6	3.49	3.8	4.4	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	17.7	18.0	74.7	3.54	4.2	4.1	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.0	17.0	65.5	3.48	4.4	3.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.0	17.0	61.3	3.44	4.7	3.6	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.1	16.1	53.9	3.35	4.9	3.3	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.8	15.2	45.4	3.33	5.1	3.0	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	5.7	14.0	33.4	3.11	5.8	2.4	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	15.9	22.7	68.0	3.01	3.0	4.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	15.5	20.7	63.9	3.04	3.1	4.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	15.0	18.1	58.7	3.05	3.2	3.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.2	13.2	39.2	2.97	4.2	3.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.3	11.8	22.7	2.67	5.3	1.9	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	13.3	19.4	50.0	2.64	2.6	3.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	12.8	17.1	45.8	2.66	2.7	3.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	12.4	15.1	42.2	2.68	2.8	3.4	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.0	13.0	38.5	2.73	3.5	3.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.2	12.4	37.6	2.70	3.4	3.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.6	12.0	33.5	2.66	3.5	2.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.1	11.7	29.7	2.60	3.7	2.5	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.0	11.5	29.3	2.60	3.7	2.5	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.8	11.2	26.2	2.56	3.8	2.3	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	5.8	10.7	22.7	2.48	3.9	2.1	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.6	10.8	22.8	2.50	4.1	2.1	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.0	9.7	14.4	2.23	4.7	1.5	0.99	6.00	1.84	0.188	0.68



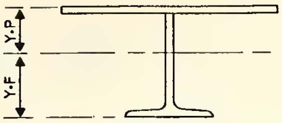
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

40t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	10.5	13.4	31.4	2.25	2.3	3.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	10.1	11.7	28.6	2.26	2.4	2.8	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	9.8	9.8	25.3	2.24	2.6	2.6	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.5	10.0	24.5	2.28	2.9	2.5	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.4	9.7	22.1	2.24	3.0	2.3	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.4	9.4	19.8	2.19	3.1	2.1	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.0	8.9	16.4	2.14	3.3	1.8	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.7	8.6	13.5	2.04	3.6	1.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	7.8	7.8	16.7	1.85	2.2	2.1	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.6	7.6	14.8	1.83	2.3	2.0	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.5	7.5	13.6	1.82	2.5	1.8	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.7	7.3	12.0	1.77	2.6	1.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	7.0	10.2	1.73	2.7	1.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	6.5	7.1	1.57	3.1	1.1	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	5.5	4.9	1.34	2.8	0.9	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.7	5.7	8.6	1.42	1.8	1.5	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.5	5.3	6.8	1.36	1.9	1.3	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.5	5.0	5.2	1.28	2.1	1.1	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	4.5	3.1	1.10	2.5	0.7	0.65	3.00	1.84	0.167	0.34



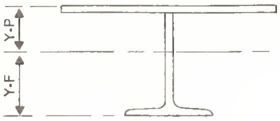
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

10.2# PLATE WEIGHT

3 NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	146.2	259.5	2,295.9	9.15	8.8	15.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	137.1	239.8	2,129.7	9.18	8.9	15.5	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	128.6	219.6	1,966.5	9.20	9.0	15.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	133.3	199.1	1,959.1	9.23	9.8	14.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	123.6	178.9	1,778.2	9.24	9.9	14.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	116.1	161.6	1,632.0	9.22	10.1	14.1	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	115.2	177.5	1,494.4	8.04	8.4	13.0	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	103.3	153.2	1,302.7	8.05	8.5	12.6	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	99.9	139.6	1,251.1	8.25	9.0	12.5	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	95.8	130.7	1,181.2	8.26	9.0	12.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	90.7	119.4	1,094.2	8.26	9.2	12.1	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	90.7	177.8	1,091.3	6.66	6.1	12.0	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	100.5	191.5	1,234.5	6.99	6.4	12.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	94.8	177.3	1,147.3	7.00	6.5	12.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	89.3	163.2	1,062.5	7.01	6.5	11.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	89.8	141.7	1,020.7	7.10	7.2	11.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	84.0	129.9	938.9	7.12	7.2	11.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	79.1	118.6	865.9	7.13	7.3	11.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	75.1	109.4	806.2	7.14	7.4	10.7	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	76.3	102.2	807.8	7.25	7.9	10.6	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	72.6	93.9	752.5	7.24	8.0	10.4	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	69.0	86.0	698.6	7.26	8.1	10.1	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	75.2	117.2	759.1	6.38	6.5	10.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	70.8	107.3	699.9	6.38	6.5	9.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	66.5	97.5	642.3	6.39	6.6	9.7	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	62.9	89.0	593.8	6.40	6.7	9.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	61.9	78.2	569.6	6.58	7.3	9.2	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	58.6	70.9	525.0	6.59	7.4	9.0	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	55.4	63.9	482.1	6.62	7.5	8.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	53.0	56.8	441.1	6.55	7.8	8.3	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	52.5	74.5	436.9	5.75	5.9	8.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	50.0	68.0	405.0	5.76	6.0	8.1	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	47.5	61.4	373.2	5.77	6.1	7.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	47.4	54.5	364.2	5.90	6.7	7.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	45.2	49.0	335.0	5.89	6.8	7.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	42.9	43.1	303.4	5.85	7.1	7.0	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	44.6	73.9	345.7	5.05	4.7	7.8	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	42.8	67.4	322.3	5.05	4.8	7.5	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	46.1	83.5	368.4	4.75	4.4	8.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	44.0	75.6	341.7	4.80	4.5	7.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	42.3	68.6	319.4	4.83	4.7	7.5	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	44.0	62.6	320.9	5.08	5.1	7.3	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	41.8	56.8	296.2	5.09	5.2	7.1	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	39.6	51.3	272.5	5.12	5.3	6.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	39.6	46.0	265.8	5.20	5.8	6.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	37.2	40.2	238.3	5.20	5.9	6.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	35.3	35.5	215.6	5.18	6.1	6.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	27.6	35.3	194.4	5.11	7.0	5.5	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	23.8	33.4	172.5	5.02	7.2	5.2	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	20.1	31.6	150.6	4.87	7.5	4.8	3.86	12.00	4.00	0.269	2.76



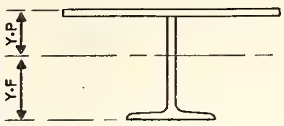
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 14 1-T	11.22	17.3	30.2	133.6	4.80	7.7	4.4	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.81-T	9.34	14.5	28.6	117.9	4.74	8.1	4.1	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	36.4	59.1	244.7	4.30	4.1	6.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	35.4	55.6	234.2	4.33	4.2	6.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	34.3	51.0	220.1	4.35	4.3	6.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	33.7	48.1	205.6	4.29	4.3	6.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	31.7	41.9	184.0	4.28	4.4	5.8	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	29.9	35.4	161.9	4.25	4.6	5.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	30.6	31.8	163.2	4.41	5.1	5.3	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	27.6	29.0	146.1	4.40	5.3	5.0	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	22.9	27.3	126.5	4.30	5.5	4.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	20.7	28.0	124.8	4.32	6.0	4.5	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	18.1	26.8	112.1	4.23	6.2	4.2	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	15.8	25.6	100.1	4.12	6.3	3.9	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	12.3	24.0	82.4	4.01	6.7	3.4	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	9.6	23.2	69.7	3.86	7.2	3.0	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	28.8	43.5	162.3	3.79	3.7	5.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	28.0	40.3	153.9	3.81	3.8	5.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	27.2	37.0	144.9	3.84	3.9	5.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	26.8	49.2	146.1	3.23	3.0	5.4	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	25.9	45.6	137.5	3.26	3.0	5.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	24.9	42.0	129.1	3.29	3.1	5.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	24.1	38.7	121.7	3.32	3.1	5.0	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	24.2	33.6	117.8	3.46	3.5	4.9	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	23.4	30.6	110.2	3.48	3.6	4.7	6.62	8.06	7.04	0.563	2.78
20 T	19.99	22.6	27.8	102.9	3.50	3.7	4.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	22.0	24.8	95.5	3.48	3.8	4.3	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	23.2	25.1	100.4	3.56	4.0	4.3	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	21.8	22.1	89.7	3.55	4.1	4.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	18.3	21.9	83.7	3.58	4.6	3.8	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	15.4	20.9	73.1	3.50	4.7	3.5	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	13.4	20.7	68.0	3.43	5.1	3.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.4	19.8	59.6	3.33	5.2	3.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.1	18.8	49.8	3.26	5.5	2.7	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.51-T	5.19	5.8	17.4	36.1	3.00	6.2	2.1	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	19.4	23.6	77.7	3.10	3.3	4.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	19.0	21.4	72.9	3.12	3.4	3.8	5.00	7.00	6.75	0.453	2.00
15 T	14.99	18.5	18.7	66.7	3.11	3.6	3.6	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.5	16.4	43.6	2.95	4.6	2.7	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.4	14.7	24.4	2.55	5.6	1.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	16.4	20.1	57.5	2.72	2.9	3.5	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	15.8	17.7	52.5	2.73	3.0	3.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	15.4	15.6	48.2	2.73	3.1	3.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	11.4	15.9	43.0	2.73	3.8	2.7	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.6	15.4	42.3	2.71	3.7	2.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.8	14.8	37.4	2.65	3.8	2.5	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	8.3	14.4	32.9	2.57	4.0	2.3	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.2	14.3	32.5	2.57	4.0	2.3	2.43	6.00	4.00	0.269	1.38



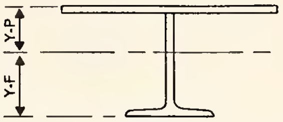
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 4 x 7 T	7.04	7.0	13.9	28.9	2.51	4.1	2.1	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	5.9	13.4	24.9	2.41	4.2	1.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.7	13.5	25.0	2.43	4.4	1.9	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.1	12.1	15.4	2.10	5.0	1.3	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	13.0	13.9	36.0	2.31	2.6	2.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.1	12.6	32.7	2.30	2.7	2.6	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.0	12.2	28.6	2.26	2.9	2.3	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.7	12.4	27.6	2.28	3.2	2.2	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.6	12.0	24.7	2.23	3.3	2.1	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.5	11.7	22.0	2.16	3.4	1.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.1	11.1	18.1	2.08	3.6	1.6	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.8	10.7	14.6	1.96	3.9	1.4	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.0	9.8	19.0	1.87	2.4	1.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.7	9.5	16.7	1.83	2.5	1.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.7	9.4	15.2	1.80	2.7	1.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.8	9.1	13.3	1.74	2.8	1.5	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	8.7	11.2	1.68	2.9	1.3	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	8.1	7.6	1.48	3.3	0.9	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	6.8	5.2	1.26	3.0	0.8	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.9	7.1	9.8	1.42	2.0	1.4	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.6	6.6	7.6	1.33	2.1	1.1	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	6.2	5.7	1.24	2.2	0.9	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	5.5	3.3	1.02	2.7	0.6	0.65	3.00	1.84	0.167	0.34



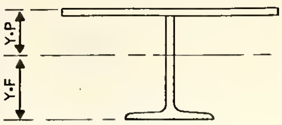
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	159.6	266.3	2,452.9	9.35	9.2	15.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	150.5	246.2	2,282.9	9.38	9.3	15.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	141.9	225.6	2,114.8	9.41	9.4	14.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	146.4	204.6	2,095.9	9.41	10.2	14.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	136.5	183.9	1,908.9	9.42	10.4	14.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	129.0	166.3	1,756.3	9.40	10.6	13.6	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	126.6	182.5	1,600.9	8.20	8.8	12.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	114.6	157.6	1,402.9	8.22	8.9	12.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	111.3	143.7	1,349.7	8.42	9.4	12.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	107.1	134.6	1.276.5	8.43	9.5	11.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	102.0	123.0	1,185.2	8.43	9.6	11.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	100.7	183.4	1,183.0	6.85	6.4	11.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	110.8	196.8	1,330.2	7.16	6.8	12.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	105.1	182.4	1,240.0	7.17	6.8	11.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	99.5	167.9	1,151.9	7.19	6.9	11.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	99.8	145.8	1,102.0	7.26	7.6	11.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	93.9	133.7	1,017.4	7.28	7.6	10.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	89.0	122.2	941.0	7.29	7.7	10.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	84.9	112.7	878.2	7.31	7.8	10.3	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	86.1	105.3	877.7	7.40	8.3	10.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	82.4	96.8	819.2	7.39	8.5	9.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	78.7	88.6	762.1	7.40	8.6	9.7	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	84.1	120.7	823.0	6.53	6.8	9.8	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	79.6	110.6	761.1	6.53	6.9	9.6	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	75.3	100.5	700.5	6.54	7.0	9.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	71.6	91.7	649.1	6.55	7.1	9.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	70.7	80.6	621.9	6.71	7.7	8.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	67.3	73.0	574.5	6.71	7.9	8.5	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	64.1	65.8	528.4	6.73	8.0	8.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	58.5	61.5	483.2	6.65	8.3	7.9	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	60.2	76.7	479.7	5.88	6.3	8.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	57.7	70.0	445.3	5.89	6.4	7.7	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	55.1	63.1	410.9	5.89	6.5	7.5	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	55.1	56.1	400.2	6.00	7.1	7.3	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	50.4	52.8	368.3	5.98	7.3	7.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	44.1	50.6	333.3	5.91	7.6	6.6	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	51.5	76.0	382.8	5.19	5.0	7.4	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	49.7	69.3	357.1	5.18	5.2	7.2	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	52.9	86.5	408.1	4.90	4.7	7.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	50.7	78.3	379.2	4.94	4.8	7.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	49.0	70.9	354.5	4.97	5.0	7.2	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	50.7	64.4	353.7	5.20	5.5	7.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	48.5	58.4	326.9	5.20	5.6	6.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	46.3	52.7	301.3	5.22	5.7	6.5	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	46.3	47.4	293.1	5.29	6.2	6.3	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	41.3	43.9	262.9	5.27	6.4	6.0	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	36.2	42.0	237.6	5.23	6.6	5.7	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	28.4	41.6	212.4	5.12	7.5	5.1	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	24.5	39.6	188.2	5.01	7.7	4.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	20.7	37.6	163.8	4.83	7.9	4.4	3.86	12.00	4.00	0.269	2.76



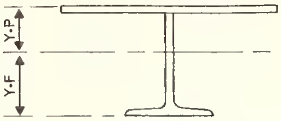
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 14 I-T	11.22	17.7	36.1	144.9	4.74	8.2	4.0	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	14.9	34.5	127.6	4.65	8.6	3.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	42.3	61.2	272.6	4.43	4.5	6.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	41.3	57.5	261.0	4.45	4.5	6.3	10.01	10.57	8.27	0.685	4.54
31 T	31.01	40.1	52.7	245.3	4.47	4.7	6.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	39.4	49.5	228.3	4.39	4.6	5.8	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	37.3	43.1	204.3	4.37	4.7	5.5	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	35.3	36.4	179.5	4.32	4.9	5.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	32.7	36.2	180.2	4.47	5.5	5.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	28.4	34.5	161.1	4.43	5.7	4.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	23.5	32.6	139.0	4.30	5.9	4.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	21.2	33.3	136.5	4.31	6.4	4.1	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	18.6	32.0	122.3	4.20	6.6	3.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.2	30.7	108.8	4.08	6.7	3.6	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	12.6	28.9	89.0	3.92	7.1	3.1	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.8	28.0	74.7	3.75	7.6	2.7	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	33.9	45.0	181.7	3.89	4.0	5.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	33.1	41.6	172.2	3.91	4.1	5.2	8.09	9.06	7.53	0.630	3.53
25 T	24.99	32.2	38.2	162.1	3.93	4.2	5.0	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	31.4	51.1	164.3	3.35	3.2	5.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	30.4	47.4	154.8	3.38	3.3	5.1	10.43	8.08	8.54	0.795	3.92
32 T	31.96	29.4	43.5	145.4	3.40	3.3	4.9	9.40	8.00	8.50	0.715	3.54
29 T	28.97	28.6	40.1	137.1	3.43	3.4	4.8	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	28.7	34.7	132.1	3.55	3.8	4.6	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	27.9	31.5	123.5	3.55	3.9	4.4	6.62	8.06	7.04	0.563	2.78
20 T	19.99	27.1	28.6	115.3	3.57	4.0	4.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	25.5	26.4	106.6	3.53	4.2	4.0	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	25.8	27.7	111.4	3.60	4.3	4.0	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	22.3	26.5	99.4	3.57	4.4	3.8	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	18.7	26.3	92.1	3.58	4.9	3.5	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.8	25.1	80.2	3.48	5.1	3.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	13.7	24.9	74.2	3.40	5.4	3.0	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	11.7	23.8	64.8	3.28	5.6	2.7	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.2	22.7	53.7	3.17	5.8	2.4	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.9	21.1	38.4	2.86	6.5	1.8	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	23.3	24.3	87.2	3.16	3.6	3.7	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.0	22.9	81.6	3.16	3.7	3.6	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.2	22.3	74.3	3.13	3.9	3.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.7	19.9	47.6	2.89	4.9	2.4	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.4	17.8	25.9	2.42	5.8	1.5	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	19.8	20.7	64.7	2.77	3.1	3.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.1	19.2	58.9	2.76	3.2	3.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	15.9	18.7	53.9	2.75	3.4	2.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.6	19.1	47.2	2.71	4.1	2.5	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.8	18.6	46.6	2.70	3.9	2.5	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.1	18.0	41.0	2.62	4.1	2.3	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.5	17.5	35.8	2.52	4.2	2.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.4	17.3	35.4	2.52	4.2	2.0	2.43	6.00	4.00	0.269	1.38



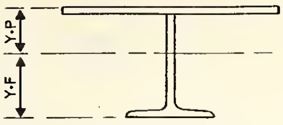
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 4 x 7 T	7.04	7.1	16.8	31.3	2.45	4.4	1.9	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.0	16.2	26.8	2.33	4.4	1.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.8	16.3	26.8	2.35	4.6	1.6	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.1	14.7	16.2	1.98	5.2	1.1	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.3	15.8	40.4	2.33	2.8	2.6	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.4	15.4	36.5	2.31	2.9	2.4	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.3	14.8	31.7	2.25	3.1	2.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.9	15.0	30.3	2.26	3.4	2.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.8	14.6	27.0	2.19	3.5	1.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.7	14.2	23.9	2.11	3.6	1.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	13.5	19.5	2.01	3.8	1.4	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.8	13.0	15.6	1.87	4.1	1.2	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.2	11.9	21.1	1.86	2.6	1.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.9	11.5	18.4	1.80	2.7	1.6	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.8	11.4	16.7	1.76	2.9	1.5	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.9	11.0	14.4	1.69	3.0	1.3	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.9	10.6	12.0	1.61	3.1	1.1	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	9.7	8.1	1.40	3.5	0.8	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	8.1	5.5	1.18	3.1	0.7	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.0	8.6	10.8	1.40	2.2	1.3	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	8.0	8.2	1.29	2.3	1.0	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	7.5	6.2	1.18	2.4	0.8	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	6.5	3.5	0.95	2.7	0.5	0.65	3.00	1.84	0.167	0.34



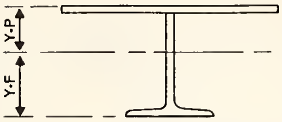
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	175.1	273.1	2,626.4	9.54	9.6	15.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	166.0	252.7	2,451.5	9.58	9.7	14.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	157.3	231.6	2,277.2	9.61	9.8	14.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	161.5	210.1	2,245.6	9.59	10.7	13.9	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	151.5	189.0	2,051.3	9.60	10.9	13.5	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	143.8	171.0	1,891.0	9.58	11.1	13.2	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	139.8	187.5	1,717.7	8.36	9.2	12.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	127.6	162.0	1,511.8	8.38	9.3	11.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	124.5	147.7	1,456.2	8.58	9.9	11.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	120.3	138.4	1,379.0	8.58	10.0	11.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	115.0	126.4	1,282.4	8.57	10.1	11.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	112.2	189.0	1,283.9	7.03	6.8	11.4	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	122.7	202.3	1,435.6	7.34	7.1	11.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	116.9	187.5	1,341.6	7.35	7.2	11.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	111.2	172.6	1,249.5	7.36	7.2	11.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	111.4	149.9	1,190.6	7.41	7.9	10.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	105.5	137.4	1,102.2	7.44	8.0	10.5	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	100.4	125.6	1,021.6	7.44	8.1	10.2	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	96.2	115.8	955.0	7.45	8.2	9.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	97.5	108.3	952.1	7.53	8.8	9.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	93.7	99.6	889.8	7.51	8.9	9.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	89.9	91.1	828.8	7.51	9.1	9.2	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	94.4	124.1	892.1	6.66	7.2	9.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	89.9	113.7	826.8	6.66	7.3	9.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	85.4	103.3	762.7	6.67	7.4	8.9	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	81.7	94.3	707.8	6.67	7.5	8.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	80.8	82.8	677.0	6.82	8.2	8.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	75.0	77.4	626.0	6.81	8.3	8.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	67.5	74.1	576.3	6.81	8.5	7.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	60.0	71.3	526.4	6.71	8.8	7.4	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	76.8	109.2	653.6	5.96	6.0	8.5	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	73.8	99.3	612.7	5.96	6.2	8.3	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	70.5	91.4	565.8	5.98	6.2	8.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	69.2	78.7	524.8	5.99	6.7	7.6	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	66.6	71.8	487.4	5.98	6.8	7.3	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	63.9	64.7	450.0	5.97	7.0	7.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	57.5	64.0	437.1	6.07	7.6	6.8	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	51.6	61.6	402.1	6.03	7.8	6.5	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	45.2	59.2	363.3	5.94	8.0	6.1	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	59.6	78.0	422.0	5.31	5.4	7.1	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	57.6	71.1	393.7	5.29	5.5	6.8	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	60.8	89.3	450.7	5.04	5.0	7.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	58.5	80.7	419.0	5.08	5.2	7.2	12.35	12.04	9.01	0.772	5.65
38 T	38.01	56.8	73.0	391.6	5.09	5.4	6.9	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	58.6	66.1	388.0	5.29	5.9	6.6	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	56.3	59.9	358.9	5.28	6.0	6.4	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	53.9	54.1	330.8	5.29	6.1	6.1	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	48.5	54.0	321.0	5.34	6.6	5.9	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	42.2	51.6	287.6	5.31	6.8	5.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	37.0	49.6	259.5	5.24	7.0	5.2	5.53	11.94	6.50	0.400	2.86



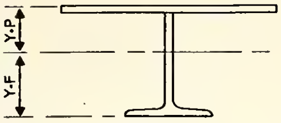
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
12 x 4 x 22 I-T	16.80	29.1	48.9	230.0	5.10	7.9	4.7	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	25.0	46.8	203.4	4.96	8.1	4.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	21.2	44.5	176.5	4.77	8.3	4.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	18.1	42.9	155.6	4.64	8.6	3.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	15.2	41.2	136.5	4.53	9.0	3.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	49.1	63.1	302.0	4.54	4.8	6.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	48.2	59.3	289.2	4.56	4.9	6.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	46.9	54.2	271.6	4.56	5.0	5.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	46.0	50.8	251.8	4.47	5.0	5.5	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	43.7	44.1	225.2	4.43	5.1	5.1	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	37.2	41.6	197.3	4.36	5.3	4.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	33.4	42.6	197.2	4.49	5.9	4.6	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	29.0	40.8	176.0	4.43	6.1	4.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.0	38.7	151.2	4.28	6.3	3.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	21.7	39.4	147.7	4.27	6.8	3.7	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.0	37.9	132.0	4.14	6.9	3.5	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.5	36.4	117.1	4.00	7.1	3.2	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	12.8	34.5	95.2	3.81	7.4	2.8	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.0	33.4	79.3	3.61	7.9	2.4	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 32 T	31.96	39.1	50.5	203.8	3.91	4.0	5.2	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	39.7	46.3	201.8	3.98	4.4	5.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	38.9	42.8	191.0	3.99	4.5	4.9	8.09	9.06	7.53	0.630	3.53
25 T	24.99	38.0	39.2	179.7	3.99	4.6	4.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	36.7	53.0	183.6	3.46	3.5	5.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	35.6	49.0	173.1	3.47	3.5	4.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	34.6	44.9	162.5	3.49	3.6	4.7	9.40	8.00	8.50	0.715	3.54
29 T	28.97	33.8	41.2	153.1	3.51	3.7	4.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	33.9	35.7	146.8	3.61	4.1	4.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	32.4	33.0	136.9	3.61	4.2	4.1	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.3	32.2	127.6	3.61	4.4	4.0	5.88	8.00	7.00	0.503	2.45
18 T	18.36	26.1	31.4	117.6	3.55	4.5	3.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	26.4	32.8	122.4	3.62	4.6	3.7	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	22.8	31.5	108.8	3.57	4.8	3.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.1	31.3	100.3	3.55	5.2	3.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.1	29.9	86.9	3.43	5.4	2.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.0	29.6	80.0	3.34	5.7	2.7	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.9	28.3	69.6	3.20	5.9	2.5	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.4	27.2	57.3	3.06	6.1	2.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.0	25.2	40.5	2.73	6.7	1.6	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	24.9	27.8	96.8	3.19	3.9	3.5	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.5	27.3	90.2	3.18	4.0	3.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.6	26.6	81.7	3.13	4.2	3.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.9	23.9	51.3	2.82	5.2	2.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.5	21.2	27.1	2.29	6.0	1.3	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.2	23.7	72.0	2.80	3.4	3.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.5	23.0	65.2	2.77	3.5	2.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.2	22.5	59.3	2.74	3.7	2.6	3.98	5.98	6.50	0.400	1.43



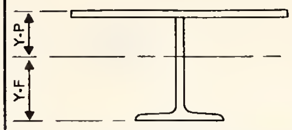
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
6 x 4 x 16 I-T	11.07	11.8	22.8	51.1	2.67	4.3	2.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.1	22.2	50.7	2.66	4.2	2.3	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.2	21.5	44.3	2.57	4.3	2.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.6	20.8	38.5	2.45	4.5	1.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.5	20.7	38.0	2.45	4.5	1.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.3	20.1	33.4	2.36	4.6	1.7	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.1	19.3	28.5	2.24	4.7	1.5	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	19.5	28.5	2.25	4.9	1.5	1.72	6.00	3.06	0.175	1.05
6 x 17/8x 4.4I-T	3.36	3.2	17.4	17.0	1.86	5.3	1.0	0.99	6.00	1.84	0.188	0.68
5 x 53/4x 14.5 T	14.52	14.6	19.0	44.7	2.34	3.1	2.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.7	18.5	40.2	2.30	3.2	2.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.4	17.8	34.7	2.22	3.3	1.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.1	18.0	32.9	2.21	3.6	1.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.9	17.5	29.2	2.14	3.7	1.7	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.8	16.9	25.7	2.05	3.8	1.5	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	16.1	20.8	1.92	4.0	1.3	1.69	4.94	3.95	0.204	0.89
5 x 23/4x 4.5 T	4.49	3.9	15.4	16.5	1.77	4.2	1.1	1.32	5.00	2.68	0.204	0.77
4 x 51/4x 10 T	10.00	8.3	14.3	23.1	1.83	2.8	1.6	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.0	13.8	20.0	1.77	2.9	1.4	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.9	13.6	18.0	1.71	3.1	1.3	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.9	13.1	15.5	1.63	3.1	1.2	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	12.6	12.8	1.54	3.2	1.0	1.48	3.95	3.94	0.204	0.67
4 x 21/4x 3.25 T	3.26	2.4	11.4	8.5	1.32	3.6	0.7	0.96	4.00	2.28	0.189	0.54
31/2x 21/8x 2.75 T	2.74	1.8	9.5	5.8	1.11	3.2	0.6	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.1	10.3	11.8	1.37	2.3	1.1	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	9.5	8.9	1.25	2.4	0.9	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	8.8	6.6	1.13	2.5	0.7	1.25	2.92	3.94	0.194	0.49
3 x 17/8x 2.2 T	2.21	1.3	7.4	3.6	0.89	2.8	0.5	0.65	3.00	1.84	0.167	0.34

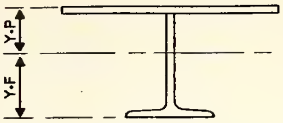


STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 1-T	84.70	191.8	279.6	2,803.3	9.72	10.0	14.6	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	182.6	258.7	2,622.8	9.76	10.1	14.4	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	173.8	237.1	2,441.3	9.79	10.3	14.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	177.7	215.2	2,396.8	9.75	11.1	13.5	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	167.6	193.6	2,194.1	9.75	11.3	13.1	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	159.7	175.2	2,025.4	9.72	11.6	12.7	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 1-T	70.15	153.9	192.1	1,835.7	8.51	9.6	11.9	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	141.6	166.1	1,620.8	8.52	9.8	11.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	138.7	151.4	1,562.2	8.71	10.3	11.3	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	134.3	141.8	1,480.7	8.70	10.4	11.0	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	129.0	129.6	1,378.2	8.68	10.6	10.7	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	124.6	194.2	1,386.3	7.19	7.1	11.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	135.5	207.3	1,542.6	7.49	7.4	11.4	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	129.6	192.1	1,444.5	7.50	7.5	11.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	123.8	176.9	1,347.8	7.51	7.6	10.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	123.8	153.6	1,279.3	7.54	8.3	10.3	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	117.8	140.8	1,186.8	7.56	8.4	10.1	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	112.6	128.6	1,101.5	7.56	8.6	9.8	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	108.4	118.5	1,030.8	7.56	8.7	9.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	109.7	111.0	1,025.3	7.63	9.2	9.3	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	102.0	105.8	958.8	7.61	9.4	9.1	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	93.3	101.9	893.5	7.59	9.6	8.8	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 1-T	54.99	105.5	127.2	961.1	6.78	7.6	9.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	100.8	116.6	892.1	6.78	7.7	8.8	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	96.3	105.8	823.9	6.77	7.8	8.6	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	92.5	96.5	765.2	6.76	7.9	8.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	84.8	91.7	730.4	6.89	8.6	8.0	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	76.8	88.1	675.6	6.87	8.8	7.7	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	69.0	84.8	621.9	6.86	9.0	7.3	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	61.3	81.8	567.2	6.73	9.3	6.9	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 1-T	49.25	86.7	111.8	709.3	6.08	6.3	8.2	14.49	14.18	10.07	0.783	6.38
68 1-T	45.24	83.6	101.7	665.5	6.07	6.5	8.0	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	80.2	93.5	614.9	6.08	6.6	7.7	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	78.7	80.5	568.5	6.07	7.1	7.2	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	73.3	76.0	528.0	6.05	7.2	6.9	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	66.0	73.3	487.2	6.02	7.4	6.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	58.8	73.4	472.1	6.10	8.0	6.4	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	52.7	71.0	433.8	6.04	8.2	6.1	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	46.1	68.3	391.2	5.93	8.5	5.7	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 1-T	37.58	68.1	79.7	460.1	5.40	5.8	6.8	11.05	12.18	10.01	0.641	4.37
53 1-T	34.55	66.0	72.6	429.1	5.37	5.9	6.5	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	69.2	91.8	492.9	5.16	5.4	7.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	66.8	82.8	458.2	5.18	5.5	6.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	65.0	74.9	427.8	5.19	5.7	6.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	67.0	67.5	421.1	5.36	6.2	6.3	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	61.1	64.6	389.5	5.34	6.4	6.0	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	55.0	62.3	358.8	5.33	6.5	5.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	49.5	62.3	347.3	5.36	7.0	5.6	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	43.0	59.7	310.6	5.31	7.2	5.2	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	37.6	57.6	279.5	5.22	7.4	4.9	5.53	11.94	6.50	0.400	2.86

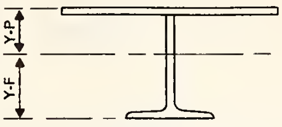


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 22 1-T	16.80	29.6	56.7	246.1	5.04	8.3	4.3	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	25.5	54.3	217.0	4.89	8.5	4.0	4.34	12.16	4.01	0.349	2.91
16.5I-T	13.11	21.5	51.7	187.8	4.68	8.7	3.6	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	18.4	50.0	164.9	4.53	8.9	3.3	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	15.4	48.2	144.2	4.39	9.4	3.0	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	56.4	64.7	330.6	4.62	5.1	5.9	10.73	10.62	8.29	0.740	4.83
34 T	34.03	55.4	60.8	316.4	4.63	5.2	5.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	54.1	55.5	296.7	4.63	5.3	5.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	51.9	53.0	274.2	4.52	5.3	5.2	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	45.0	50.6	244.9	4.47	5.4	4.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	37.9	48.2	213.9	4.37	5.6	4.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	34.1	49.4	213.0	4.48	6.3	4.3	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	29.5	47.4	189.5	4.40	6.4	4.0	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	24.4	45.1	162.2	4.23	6.7	3.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	22.1	45.8	157.8	4.21	7.1	3.4	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	19.3	44.1	140.7	4.07	7.3	3.2	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	16.8	42.4	124.4	3.91	7.4	2.9	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	13.0	40.3	100.5	3.69	7.7	2.5	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	10.1	39.0	83.1	3.47	8.2	2.1	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	46.3	55.9	236.7	3.97	4.2	5.1	10.28	9.00	8.75	0.751	3.94
32 T	31.96	45.3	51.7	224.2	3.98	4.3	4.9	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	46.0	47.5	221.1	4.04	4.7	4.8	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	43.8	45.1	209.0	4.04	4.8	4.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	40.1	44.1	196.3	4.03	4.9	4.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	42.3	54.5	202.5	3.54	3.7	4.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	41.2	50.3	190.8	3.55	3.8	4.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	40.2	46.0	179.0	3.56	3.9	4.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	39.3	42.2	168.3	3.56	4.0	4.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	36.5	39.4	160.6	3.65	4.4	4.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	33.1	38.5	149.5	3.63	4.5	3.9	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.9	37.7	139.0	3.62	4.7	3.7	5.88	8.00	7.00	0.503	2.45
18 T	18.36	26.6	36.7	127.8	3.55	4.8	3.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	26.8	38.2	132.5	3.61	4.9	3.5	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	23.1	36.8	117.4	3.54	5.1	3.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	19.4	36.6	107.6	3.50	5.5	2.9	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	16.3	35.0	92.8	3.36	5.7	2.7	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.2	34.5	85.1	3.26	6.0	2.5	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.1	33.0	73.8	3.11	6.1	2.2	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.5	31.7	60.3	2.95	6.3	1.9	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.51-T	5.19	6.1	29.4	42.2	2.60	6.9	1.4	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	25.4	32.5	105.5	3.20	4.2	3.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.9	32.0	98.0	3.17	4.3	3.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.9	31.2	88.4	3.11	4.4	2.8	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.1	28.0	54.4	2.74	5.4	1.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.5	24.6	28.2	2.17	6.2	1.1	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.6	27.8	78.6	2.80	3.6	2.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.8	27.0	70.9	2.76	3.8	2.6	4.56	6.04	6.52	0.465	1.60



PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

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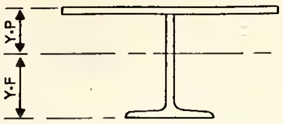
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 6 1/2 x 13.5 T	13.53	16.5	26.4	64.2	2.72	3.9	2.4	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.0	26.6	54.6	2.61	4.5	2.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.3	26.1	54.3	2.61	4.4	2.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.4	25.2	47.3	2.50	4.5	1.9	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.7	24.3	40.8	2.38	4.7	1.7	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.6	24.2	40.3	2.37	4.7	1.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.3	23.5	35.3	2.28	4.8	1.5	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.2	22.5	29.9	2.14	4.8	1.3	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	22.7	29.9	2.15	5.0	1.3	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.2	20.0	17.6	1.75	5.5	0.9	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.8	22.3	48.6	2.32	3.3	2.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.9	21.7	43.5	2.28	3.4	2.0	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.6	20.9	37.3	2.18	3.5	1.8	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.2	21.1	35.2	2.16	3.8	1.7	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.0	20.4	31.1	2.07	3.9	1.5	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.9	19.7	27.2	1.98	4.0	1.4	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.3	18.8	21.8	1.84	4.1	1.2	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	17.8	17.2	1.69	4.4	1.0	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.5	16.8	24.8	1.80	2.9	1.5	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.1	16.2	21.4	1.72	3.0	1.3	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.0	15.9	19.1	1.66	3.2	1.2	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.0	15.2	16.4	1.57	3.3	1.1	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	14.6	13.5	1.47	3.4	0.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	13.0	8.8	1.24	3.7	0.7	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	10.7	6.0	1.04	3.3	0.6	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.2	12.0	12.6	1.33	2.4	1.0	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	11.0	9.4	1.20	2.5	0.9	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	10.1	6.9	1.07	2.6	0.7	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	8.2	3.7	0.83	2.9	0.5	0.65	3.00	1.84	0.167	0.34



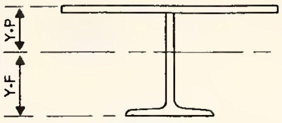
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	210.0	285.7	2,986.5	9.89	10.5	14.2	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	200.7	264.4	2,799.3	9.92	10.6	13.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	191.8	242.4	2,609.6	9.95	10.8	13.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	195.4	220.1	2,551.8	9.89	11.6	13.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	185.1	198.0	2,339.7	9.88	11.8	12.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	177.0	179.2	2,161.6	9.84	12.1	12.2	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	169.3	196.5	1,956.8	8.63	10.0	11.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	156.9	169.8	1,731.7	8.63	10.2	11.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	154.1	154.8	1,669.3	8.81	10.8	10.8	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	145.0	149.7	1,582.9	8.80	10.9	10.6	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	132.4	144.2	1,473.9	8.77	11.1	10.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	138.1	199.1	1,491.7	7.34	7.5	10.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	149.5	212.0	1,653.1	7.63	7.8	11.1	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	143.5	196.4	1,550.1	7.64	7.9	10.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	137.6	180.8	1,448.3	7.65	8.0	10.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	137.3	157.1	1,369.7	7.66	8.7	10.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	131.3	143.9	1,272.3	7.67	8.8	9.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	126.0	131.4	1,181.9	7.65	9.0	9.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	121.0	121.7	1,106.4	7.65	9.1	9.1	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	113.4	123.0	1,098.2	7.71	9.7	8.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	104.2	119.0	1,027.2	7.67	9.9	8.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	95.2	115.0	957.2	7.64	10.1	8.3	10.76	18.00	7.50	0.570	6.44
16 x 11 1/2 x 96 I-T	64.24	121.9	163.3	1,165.3	6.89	7.1	9.6	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	117.4	150.1	1,089.1	6.88	7.3	9.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	117.5	130.1	1,031.0	6.88	7.9	8.8	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	112.7	119.1	957.8	6.86	8.0	8.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	108.1	108.1	885.1	6.85	8.2	8.2	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	98.5	104.2	822.2	6.83	8.3	7.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	86.5	103.5	782.9	6.94	9.0	7.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	78.3	99.8	724.0	6.90	9.2	7.3	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	70.3	96.4	666.0	6.87	9.5	6.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	62.5	93.2	606.4	6.73	9.7	6.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	104.9	134.8	907.0	6.32	6.7	8.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	102.7	123.9	858.3	6.32	6.9	8.4	15.88	14.91	10.48	0.760	8.17
14 x 12 x 78 I-T	50.45	96.1	121.6	774.9	6.15	6.4	8.1	14.84	14.06	12.00	0.718	6.01
14 x 10 x 74 I-T	49.25	97.5	114.2	765.4	6.17	6.7	7.9	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	94.3	103.9	718.4	6.16	6.9	7.6	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	90.8	95.3	663.7	6.15	7.0	7.3	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	82.1	89.1	611.6	6.12	7.5	6.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	74.7	86.3	567.6	6.09	7.6	6.6	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	67.2	83.5	523.3	6.04	7.8	6.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	59.8	83.7	505.8	6.10	8.5	6.0	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	53.6	81.1	464.1	6.03	8.7	5.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	46.9	78.3	417.6	5.90	8.9	5.3	6.38	13.86	6.73	0.383	3.74
12 x 12 x 50 T	50.01	77.5	106.6	555.4	5.23	5.2	7.2	14.71	12.00	12.00	0.775	5.61
12 x 10 x 58 I-T	37.58	77.5	81.2	497.8	5.46	6.1	6.4	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	74.0	75.2	463.8	5.42	6.3	6.2	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	78.4	94.0	535.2	5.25	5.7	6.8	13.81	12.15	9.06	0.872	6.26

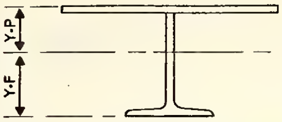


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 9 x 42 T	41.99	75.9	84.7	497.1	5.26	5.9	6.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	74.0	76.5	463.6	5.25	6.1	6.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	68.8	76.1	453.6	5.40	6.6	6.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	62.2	73.6	419.2	5.37	6.7	5.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	55.9	71.2	385.7	5.34	6.9	5.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	50.4	71.3	372.4	5.36	7.4	5.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	43.7	68.5	332.3	5.28	7.6	4.9	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	38.2	66.3	298.3	5.17	7.8	4.5	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	30.1	65.1	261.0	4.97	8.7	4.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	25.9	62.4	229.5	4.80	8.9	3.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	21.9	59.5	198.0	4.57	9.0	3.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	18.7	57.6	173.2	4.41	9.3	3.0	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	15.6	55.7	151.0	4.25	9.7	2.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	64.4	66.2	358.8	4.68	5.4	5.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	62.1	63.3	343.1	4.68	5.5	5.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	56.6	61.9	321.3	4.67	5.7	5.2	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	52.8	60.5	296.0	4.55	5.6	4.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	45.8	58.0	263.8	4.48	5.8	4.6	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	38.5	55.4	229.6	4.36	6.0	4.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	34.6	56.7	227.7	4.45	6.6	4.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	29.9	54.6	202.1	4.35	6.8	3.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.7	52.0	172.3	4.16	7.0	3.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	22.4	52.7	167.0	4.13	7.4	3.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.6	50.8	148.5	3.98	7.6	2.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.0	48.9	131.0	3.81	7.7	2.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.2	46.4	105.1	3.57	8.0	2.3	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.2	44.9	86.5	3.33	8.4	1.9	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	53.1	57.1	258.1	4.03	4.5	4.9	10.28	9.00	8.75	0.751	3.94
32 T	31.96	52.0	52.8	244.2	4.03	4.6	4.7	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	48.5	52.8	239.8	4.07	4.9	4.5	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	44.7	51.8	226.3	4.06	5.1	4.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	40.8	50.8	212.2	4.04	5.2	4.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	48.4	55.9	221.3	3.60	4.0	4.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	47.3	51.5	208.3	3.60	4.0	4.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	46.1	47.0	195.1	3.60	4.1	4.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	43.1	45.2	183.2	3.60	4.3	4.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	37.2	45.4	173.9	3.66	4.7	3.8	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	33.7	44.4	161.5	3.63	4.8	3.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	30.4	43.5	149.8	3.61	4.9	3.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.1	42.5	137.3	3.53	5.1	3.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	27.2	44.0	141.9	3.59	5.2	3.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	23.5	42.5	125.3	3.50	5.3	3.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.7	42.2	114.2	3.44	5.8	2.7	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.5	40.4	98.2	3.28	5.9	2.4	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.4	39.7	89.7	3.18	6.2	2.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.2	38.0	77.5	3.02	6.3	2.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.6	36.5	62.9	2.84	6.6	1.7	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.2	33.6	43.6	2.47	7.1	1.3	1.53	8.00	2.28	0.188	1.08



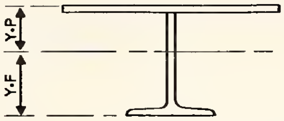
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MOODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 19 T	19.01	25.8	37.6	113.8	3.19	4.4	3.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.2	37.1	105.3	3.15	4.5	2.8	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.2	36.1	94.6	3.07	4.7	2.6	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.2	32.3	57.2	2.65	5.6	1.8	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.6	28.1	29.1	2.06	6.3	1.0	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.0	32.2	84.8	2.79	3.9	2.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.1	31.4	76.2	2.74	4.0	2.4	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.7	30.7	68.7	2.68	4.1	2.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	12.2	30.7	57.7	2.55	4.7	1.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.4	30.1	57.5	2.55	4.6	1.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.5	29.0	49.9	2.43	4.7	1.7	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	8.8	28.0	42.8	2.30	4.8	1.5	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.7	27.8	42.3	2.29	4.9	1.5	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.4	27.0	36.9	2.19	5.0	1.4	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.2	25.8	31.1	2.05	5.0	1.2	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.0	26.0	31.1	2.06	5.2	1.2	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.2	22.6	18.1	1.65	5.6	0.8	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.1	25.9	52.2	2.30	3.5	2.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.0	25.1	46.5	2.24	3.6	1.8	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.7	24.2	39.6	2.13	3.7	1.6	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.4	24.3	37.2	2.10	4.0	1.5	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.1	23.5	32.8	2.01	4.0	1.4	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.9	22.7	28.6	1.91	4.1	1.3	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.3	21.5	22.8	1.76	4.3	1.1	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.0	20.2	17.8	1.60	4.5	0.9	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.6	19.4	26.4	1.76	3.1	1.4	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.2	18.6	22.7	1.67	3.2	1.2	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.1	18.2	20.1	1.60	3.3	1.1	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.1	17.4	17.2	1.51	3.4	1.0	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	16.5	14.0	1.41	3.5	0.8	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	14.5	9.1	1.17	3.7	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	11.8	6.2	0.98	3.3	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.3	13.8	13.4	1.29	2.5	1.0	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	12.5	9.9	1.16	2.6	0.8	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	11.3	7.2	1.02	2.7	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	9.0	3.9	0.78	2.9	0.4	0.65	3.00	1.84	0.167	0.34



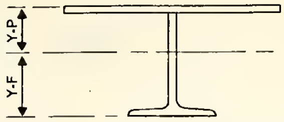
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 1-T	84.70	251.6	297.2	3,371.0	10.17	11.3	13.4	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	242.2	275.0	3,167.3	10.20	11.5	13.1	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	233.0	251.9	2,957.9	10.20	11.7	12.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	229.1	235.8	2,872.3	10.10	12.5	12.2	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	206.0	225.2	2,637.9	10.07	12.8	11.7	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	186.4	216.6	2,438.2	10.00	13.1	11.3	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 1-T	70.15	204.6	204.6	2,207.4	8.83	10.8	10.8	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	176.7	191.7	1,958.2	8.80	11.1	10.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	160.9	189.4	1,886.0	8.95	11.7	10.0	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	150.6	184.7	1,788.4	8.92	11.9	9.7	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	137.4	178.9	1,664.7	8.86	12.1	9.3	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	169.0	207.9	1,711.4	7.58	8.2	10.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	181.5	220.6	1,883.7	7.87	8.5	10.4	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	175.2	204.3	1,769.3	7.86	8.7	10.1	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	169.1	187.9	1,655.1	7.86	8.8	9.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	163.3	168.2	1,554.5	7.82	9.5	9.2	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	149.4	162.0	1,445.6	7.81	9.7	8.9	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	136.3	156.4	1,343.1	7.77	9.9	8.6	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	125.4	151.9	1,257.0	7.74	10.0	8.3	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	117.6	153.3	1,242.9	7.78	10.6	8.1	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	108.0	149.0	1,161.7	7.72	10.8	7.8	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	98.6	144.8	1,081.2	7.66	11.0	7.5	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	153.0	186.9	1,438.3	7.11	7.7	9.4	20.76	16.66	11.53	0.960	10.07
65 T	65.04	149.4	171.1	1,355.0	7.11	7.9	9.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 1-T	64.24	150.2	169.7	1,335.4	7.09	7.9	8.9	18.89	16.32	11.53	0.875	8.73
88 1-T	59.02	145.4	155.9	1,248.6	7.06	8.0	8.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	135.3	145.0	1,172.8	7.01	8.7	8.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	123.7	140.0	1,089.9	6.98	8.8	7.8	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	112.1	135.0	1,006.9	6.94	9.0	7.5	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	102.0	130.9	934.5	6.89	9.2	7.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	89.5	130.3	885.2	6.95	9.9	6.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	80.9	126.4	817.1	6.88	10.1	6.5	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	72.5	122.8	749.6	6.81	10.3	6.1	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	64.4	118.9	680.1	6.63	10.6	5.7	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	130.7	140.5	1,045.3	6.50	7.4	8.0	17.07	15.00	10.50	0.850	8.46
54 T	53.99	128.1	129.1	986.9	6.47	7.6	7.7	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	107.6	118.6	823.8	6.27	7.7	6.9	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	98.4	114.9	759.9	6.23	7.7	6.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	84.7	112.8	695.6	6.15	8.2	6.2	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	77.0	109.7	644.1	6.09	8.4	5.9	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	69.2	106.6	592.2	6.01	8.6	5.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	61.6	106.9	569.3	6.04	9.2	5.3	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	55.2	104.0	520.5	5.93	9.4	5.0	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	48.2	100.7	466.1	5.76	9.7	4.6	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 1-T	37.58	83.8	98.6	571.5	5.52	6.8	5.8	11.05	12.18	10.01	0.641	4.37
53 1-T	34.55	76.2	96.1	531.2	5.46	7.0	5.5	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	97.8	99.2	619.9	5.37	6.3	6.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	88.0	96.6	574.3	5.36	6.5	5.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	79.3	94.4	533.7	5.32	6.7	5.7	11.18	11.95	8.98	0,682	5.26



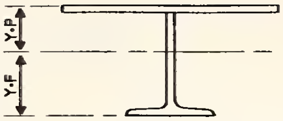
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 8 x 50 I-T	33.81	71.0	96.7	516.5	5.42	7.3	5.3	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	64.1	94.0	476.2	5.35	7.4	5.1	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	57.4	91.4	436.6	5.29	7.6	4.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	51.8	91.5	419.5	5.29	8.1	4.6	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	44.8	88.4	372.3	5.16	8.3	4.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	39.1	85.7	332.3	5.02	8.5	3.9	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	30.9	83.8	287.6	4.78	9.3	3.4	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	26.6	80.6	251.6	4.58	9.5	3.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	22.4	76.8	215.9	4.33	9.6	2.8	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.1	74.4	187.6	4.14	9.8	2.5	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.0	72.0	162.5	3.95	10.2	2.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	68.6	82.4	414.0	4.74	6.0	5.0	10.73	10.62	8.29	0.740	4.83
34 T	34.03	64.2	81.2	394.9	4.73	6.1	4.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	58.5	79.6	368.5	4.68	6.3	4.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	54.4	77.6	337.7	4.55	6.2	4.3	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	47.0	74.7	299.4	4.44	6.4	4.0	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	39.4	71.5	258.8	4.28	6.6	3.6	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	35.5	73.2	254.8	4.34	7.2	3.5	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	30.6	70.7	224.8	4.20	7.3	3.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	25.3	67.4	190.1	3.98	7.5	2.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.0	68.0	183.3	3.93	8.0	2.7	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.1	65.5	162.2	3.77	8.1	2.5	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.4	63.0	142.5	3.59	8.2	2.3	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.4	59.8	113.1	3.31	8.4	1.9	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.4	57.4	92.1	3.06	8.8	1.6	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	59.2	68.5	299.7	4.09	5.1	4.4	10.28	9.00	8.75	0.751	3.94
32 T	31.96	54.6	67.3	282.7	4.07	5.2	4.2	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	50.1	68.0	275.8	4.09	5.5	4.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	46.1	66.9	259.3	4.06	5.6	3.9	8.09	9.06	7.53	0.630	3.53
25 T	24.99	42.1	65.7	242.1	4.01	5.8	3.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	58.1	62.2	258.4	3.68	4.4	4.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	53.5	60.9	242.6	3.66	4.5	4.0	10.43	8.08	8.54	0.795	3.92
32 T	31.96	48.7	59.7	226.3	3.64	4.6	3.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	44.5	58.6	211.6	3.62	4.8	3.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	38.3	58.9	198.9	3.64	5.2	3.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	34.6	57.7	183.9	3.59	5.3	3.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	31.2	56.6	169.6	3.54	5.4	3.0	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.8	55.2	154.6	3.44	5.6	2.8	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	27.9	57.0	159.2	3.49	5.7	2.8	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.0	55.1	139.5	3.37	5.8	2.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.1	54.6	126.0	3.28	6.3	2.3	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.9	52.2	107.5	3.11	6.4	2.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.7	51.1	97.7	2.99	6.6	1.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.5	48.8	83.9	2.82	6.7	1.7	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.8	46.7	67.4	2.61	6.9	1.4	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.3	42.4	46.0	2.24	7.4	1.1	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	26.5	49.0	128.9	3.12	4.9	2.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.8	48.3	118.5	3.06	5.0	2.5	5.00	7.00	6.75	0.453	2.00



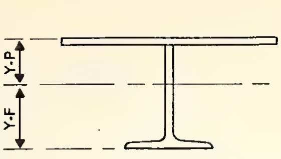
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 15 T	14.99	20.6	47.0	105.7	2.96	5.1	2.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.4	41.5	62.0	2.47	5.9	1.5	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.7	34.9	30.6	1.85	6.6	0.9	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.5	42.0	96.2	2.72	4.3	2.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.6	40.9	85.7	2.65	4.4	2.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.1	39.9	76.7	2.57	4.5	1.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	12.5	39.4	63.2	2.40	5.1	1.6	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.7	38.8	63.2	2.41	5.0	1.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.8	37.3	54.4	2.28	5.1	1.5	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.0	35.7	46.4	2.14	5.1	1.3	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.9	35.5	45.8	2.13	5.1	1.3	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.6	34.2	39.7	2.02	5.2	1.2	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.3	32.5	33.2	1.88	5.2	1.0	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.1	32.7	33.2	1.88	5.4	1.0	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.3	27.4	18.9	1.48	5.7	0.7	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.5	33.6	58.7	2.22	3.8	1.7	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.3	32.6	51.9	2.14	3.9	1.6	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.0	31.2	43.7	2.01	4.0	1.4	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.6	31.2	40.8	1.97	4.3	1.3	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.3	30.0	35.7	1.87	4.3	1.2	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.1	28.7	30.9	1.77	4.4	1.1	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.4	26.9	24.4	1.61	4.5	0.9	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.0	24.9	18.9	1.45	4.7	0.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.8	24.8	29.2	1.66	3.3	1.2	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.3	23.7	24.9	1.56	3.4	1.0	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.2	23.0	21.9	1.49	3.5	1.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.2	21.7	18.6	1.39	3.6	0.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.1	20.4	15.0	1.28	3.7	0.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	17.2	9.6	1.05	3.9	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	13.7	6.5	0.88	3.5	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.4	17.4	14.7	1.21	2.7	0.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.9	15.5	10.8	1.07	2.7	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.8	13.6	7.7	0.93	2.8	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	10.1	4.1	0.70	3.0	0.4	0.65	3.00	1.84	0.167	0.34

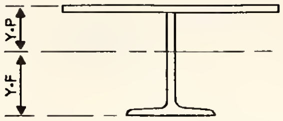


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 14 x 130 1-T	89.83	302.2	334.7	3,928.9	10.39	11.7	13.0	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	298.8	307.2	3,756.0	10.37	12.2	12.6	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	283.9	289.1	3,532.5	10.38	12.4	12.2	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	259.9	279.6	3,300.0	10.36	12.7	11.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	236.7	281.6	3,186.8	10.22	13.5	11.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	212.7	270.5	2,926.9	10.16	13.8	10.8	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	192.3	261.4	2,703.3	10.06	14.1	10.3	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	247.9	257.0	2,712.4	9.15	10.6	10.9	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	211.5	244.5	2,453.9	8.95	11.6	10.0	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	182.3	231.1	2,176.9	8.88	11.9	9.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	166.0	229.1	2,092.6	8.99	12.6	9.1	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	155.2	224.2	1,982.7	8.94	12.8	8.8	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	141.5	218.0	1,843.1	8.85	13.0	8.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	203.9	215.3	1,929.1	7.75	9.0	9.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	217.6	228.0	2,113.0	8.03	9.3	9.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	210.9	211.0	1,985.2	8.01	9.4	9.4	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	193.7	204.6	1,856.8	7.98	9.6	9.1	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	168.5	203.1	1,733.3	7.90	10.3	8.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	154.0	196.6	1,611.3	7.87	10.5	8.2	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	140.3	190.7	1,495.5	7.80	10.7	7.8	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	128.9	185.9	1,397.6	7.75	10.8	7.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	121.0	187.4	1,377.5	7.76	11.4	7.4	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	111.0	182.6	1,285.5	7.67	11.6	7.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	101.2	178.1	1,194.0	7.58	11.8	6.7	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	185.5	193.5	1,625.2	7.27	8.4	8.8	20.76	16.66	11.53	0.960	10.07
65 T	65.04	176.9	181.6	1,527.9	7.24	8.6	8.4	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 1-T	64.24	175.0	182.2	1,501.4	7.21	8.6	8.2	18.89	16.32	11.53	0.875	8.73
88 1-T	59.02	160.6	177.0	1,402.6	7.16	8.7	7.9	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	139.5	175.9	1,308.6	7.07	9.4	7.4	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	127.4	170.6	1,215.0	7.01	9.5	7.1	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	115.3	165.3	1,120.8	6.95	9.7	6.8	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	104.8	160.8	1,038.1	6.87	9.9	6.5	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	91.9	160.4	978.1	6.88	10.6	6.1	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	83.0	156.2	900.5	6.78	10.9	5.8	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	74.2	152.2	823.4	6.67	11.1	5.4	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	65.9	147.6	744.4	6.47	11.3	5.0	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	145.2	159.7	1,178.6	6.60	8.1	7.4	17.07	15.00	10.50	0.850	8.46
54 T	53.99	133.2	156.8	1,109.8	6.55	8.3	7.1	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	110.6	145.9	922.4	6.29	8.3	6.3	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	100.9	141.8	848.7	6.22	8.4	6.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	86.8	139.2	772.1	6.10	8.9	5.5	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	78.8	135.8	712.9	6.02	9.1	5.2	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	70.7	132.3	653.2	5.91	9.2	4.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	63.0	132.8	624.9	5.90	9.9	4.7	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	56.4	129.4	569.2	5.76	10.1	4.4	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	49.2	125.4	507.4	5.57	10.3	4.0	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	100.8	122.6	699.7	5.42	6.9	5.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	90.5	119.6	646.1	5.38	7.1	5.4	12.35	12.04	9.01	0.772	5.65



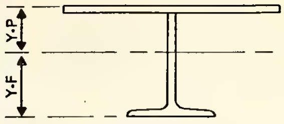
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 9 x 38 T	38.01	81.4	117.1	598.1	5.31	7.3	5.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	72.7	119.7	573.4	5.36	7.9	4.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	65.5	116.6	526.9	5.27	8.0	4.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	58.6	113.8	481.2	5.18	8.2	4.2	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	52.9	113.8	460.4	5.15	8.7	4.0	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	45.7	110.3	406.4	4.99	8.9	3.7	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	39.8	107.0	360.8	4.82	9.1	3.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	31.5	104.1	309.7	4.55	9.8	3.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.1	100.2	269.7	4.34	10.0	2.7	4.34	12.16	4.01	0.349	2.91
16.5I-T	13.11	22.8	95.4	230.3	4.08	10.1	2.4	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.4	92.3	199.1	3.87	10.2	2.2	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	16.2	89.3	171.5	3.67	10.6	1.9	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	70.5	102.5	464.4	4.73	6.6	4.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	65.9	101.2	441.8	4.70	6.7	4.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	59.9	99.3	410.7	4.63	6.9	4.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	55.6	96.6	374.8	4.48	6.7	3.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.0	93.1	330.5	4.34	6.9	3.6	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.2	89.2	283.7	4.15	7.1	3.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.2	91.2	277.8	4.18	7.7	3.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.2	88.2	243.6	4.02	7.8	2.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	25.7	84.0	204.8	3.78	8.0	2.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.4	84.4	196.6	3.72	8.4	2.3	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.4	81.2	173.3	3.55	8.5	2.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.7	77.9	151.6	3.36	8.6	1.9	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	13.6	73.7	119.3	3.07	8.7	1.6	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.6	70.2	96.5	2.82	9.1	1.4	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	60.8	85.6	337.7	4.08	5.6	3.9	10.28	9.00	8.75	0.751	3.94
32 T	31.96	56.0	84.2	317.4	4.04	5.7	3.8	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	51.4	85.0	308.0	4.05	6.0	3.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	47.2	83.7	288.4	3.99	6.1	3.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.0	82.2	268.3	3.93	6.2	3.3	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	59.9	77.6	292.8	3.69	4.9	3.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	55.0	76.1	273.9	3.66	5.0	3.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	50.0	74.6	254.5	3.62	5.1	3.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	45.6	73.3	237.0	3.58	5.2	3.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	39.2	73.6	220.8	3.57	5.6	3.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	35.4	72.2	203.2	3.50	5.7	2.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	31.8	70.9	186.5	3.43	5.9	2.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.3	69.0	169.2	3.31	6.0	2.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.4	71.0	173.7	3.36	6.1	2.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.4	68.6	151.3	3.22	6.2	2.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.4	67.8	135.7	3.11	6.6	2.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.1	64.6	115.1	2.92	6.7	1.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.0	63.0	104.2	2.80	7.0	1.7	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.7	59.9	89.1	2.63	7.0	1.5	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.9	57.0	70.9	2.41	7.2	1.2	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	6.3	50.7	48.0	2.04	7.6	0.9	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	27.0	61.3	141.8	3.02	5.2	2.3	5.59	7.06	6.78	0.513	2.20

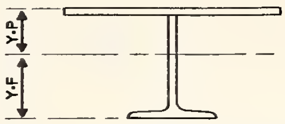


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 17 T	17.00	24.2	60.3	129.6	2.94	5.4	2.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.0	58.6	114.8	2.82	5.5	2.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.6	50.9	65.8	2.29	6.2	1.3	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.7	41.0	31.8	1.68	6.7	0.8	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.0	52.5	105.9	2.63	4.6	2.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.9	51.0	93.7	2.54	4.7	1.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.4	49.6	83.4	2.44	4.8	1.7	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	12.7	48.3	67.7	2.26	5.3	1.4	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.9	47.8	67.8	2.26	5.2	1.4	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.9	45.6	58.0	2.13	5.3	1.3	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.2	43.3	49.2	1.99	5.4	1.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.1	43.1	48.6	1.98	5.4	1.1	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.7	41.3	41.9	1.86	5.4	1.0	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	6.4	38.8	34.9	1.72	5.4	0.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.2	39.1	34.8	1.72	5.6	0.9	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.3	31.5	19.7	1.34	5.9	0.6	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.8	41.7	64.2	2.12	4.1	1.5	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.6	40.3	56.3	2.03	4.1	1.4	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.2	38.3	47.1	1.90	4.2	1.2	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.7	38.1	43.7	1.85	4.5	1.1	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.4	36.4	38.0	1.74	4.5	1.0	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.2	34.6	32.8	1.64	4.6	0.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.5	31.9	25.7	1.48	4.6	0.8	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.1	29.0	19.8	1.32	4.8	0.7	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.9	30.2	31.5	1.56	3.5	1.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.5	28.6	26.7	1.46	3.6	0.9	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.3	27.5	23.4	1.38	3.7	0.9	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.3	25.8	19.7	1.29	3.7	0.8	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.2	23.8	15.9	1.18	3.8	0.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	19.4	10.1	0.96	4.0	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	15.1	6.9	0.80	3.5	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.6	20.7	15.9	1.13	2.9	0.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.0	18.1	11.5	0.99	2.9	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.8	15.5	8.2	0.85	2.9	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.4	10.9	4.3	0.64	3.1	0.4	0.65	3.00	1.84	0.167	0.34



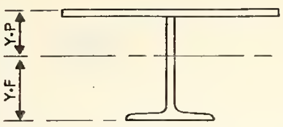
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
27 x 14 x 145 1-T	102.05	412.0	415.0	5,674.2	11.53	13.7	13.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	322.6	396.1	4,949.9	11.46	15.3	12.5	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	290.4	381.2	4,552.9	11.39	15.7	11.9	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	267.4	370.8	4,266.5	11.30	16.0	11.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	344.2	356.6	4,343.9	10.54	12.6	12.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	315.8	352.7	4,142.6	10.50	13.1	11.7	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	291.7	342.7	3,895.9	10.48	13.4	11.4	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	266.7	332.9	3,637.1	10.43	13.6	10.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	243.4	333.8	3,496.4	10.27	14.4	10.5	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	218.5	322.1	3,207.9	10.17	14.7	10.0	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	197.4	312.3	2,958.6	10.03	15.0	9.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	263.8	295.0	3,003.2	9.25	11.4	10.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	217.5	289.9	2,696.9	9.00	12.4	9.3	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	187.2	275.8	2,388.8	8.88	12.8	8.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	170.3	274.3	2,290.5	8.96	13.5	8.3	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	159.1	269.0	2,167.5	8.88	13.6	8.1	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	144.9	262.3	2,010.9	8.76	13.9	7.7	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	221.6	243.8	2,145.5	7.86	9.7	8.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	234.3	258.8	2,341.6	8.13	10.0	9.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	216.5	251.8	2,198.6	8.09	10.2	8.7	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	198.7	245.0	2,054.3	8.03	10.3	8.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	172.9	242.8	1,906.9	7.92	11.0	7.9	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	157.8	235.9	1,770.4	7.85	11.2	7.5	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	143.6	229.6	1,640.2	7.76	11.4	7.1	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	131.8	224.4	1,529.7	7.68	11.6	6.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	123.8	225.9	1,503.6	7.67	12.1	6.7	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	113.5	220.7	1,400.3	7.56	12.3	6.3	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	103.4	215.8	1,297.3	7.44	12.6	6.0	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	199.1	222.6	1,809.9	7.36	9.1	8.1	20.76	16.66	11.53	0.960	10.07
65 T	65.04	181.8	218.3	1,697.3	7.31	9.3	7.8	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 1-T	64.24	179.5	218.5	1,663.8	7.26	9.3	7.6	18.89	16.32	11.53	0.875	8.73
88 1-T	59.02	164.5	212.8	1,551.9	7.19	9.4	7.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	143.0	211.1	1,439.4	7.06	10.1	6.8	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	130.5	205.3	1,334.2	6.98	10.2	6.5	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	118.0	199.6	1,227.9	6.88	10.4	6.2	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	107.1	194.6	1,134.5	6.78	10.6	5.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	93.8	194.3	1,063.3	6.75	11.3	5.5	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	84.6	189.6	976.2	6.62	11.5	5.1	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	75.6	185.2	889.4	6.48	11.8	4.8	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	67.1	179.7	801.2	6.26	11.9	4.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	149.1	192.6	1,307.8	6.63	8.8	6.8	17.07	15.00	10.50	0.850	8.46
54 T	53.99	136.7	189.3	1,228.0	6.56	9.0	6.5	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	113.1	176.8	1,015.4	6.25	9.0	5.7	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	102.9	172.2	931.4	6.15	9.1	5.4	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	88.5	168.9	842.5	6.00	9.5	5.0	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	80.2	165.1	775.4	5.89	9.7	4.7	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	71.9	161.1	708.1	5.75	9.8	4.4	8.70	13.68	8.00	0.528	4.21

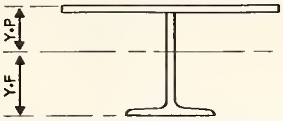


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 6 3/4 x 38 I-T	27.05	64.2	161.6	674.4	5.72	10.5	4.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	57.3	157.7	612.1	5.56	10.7	3.9	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	50.0	152.8	543.3	5.34	10.9	3.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	103.3	149.0	775.4	5.41	7.5	5.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	92.6	145.7	713.3	5.34	7.7	4.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	83.2	142.7	657.7	5.25	7.9	4.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	74.0	145.5	625.3	5.26	8.4	4.3	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	66.7	142.0	572.8	5.15	8.6	4.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	59.6	138.7	521.0	5.03	8.7	3.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	53.8	138.7	496.5	4.98	9.2	3.6	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.4	134.4	436.0	4.79	9.4	3.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.4	130.5	385.3	4.60	9.5	3.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.0	126.3	328.5	4.32	10.3	2.6	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.5	121.3	284.9	4.09	10.4	2.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.2	115.3	242.4	3.83	10.5	2.1	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.7	111.2	208.6	3.61	10.6	1.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.4	107.2	178.9	3.41	10.9	1.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	72.0	125.0	511.0	4.67	7.1	4.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	67.3	123.5	484.9	4.62	7.2	3.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	61.1	121.2	449.1	4.54	7.3	3.7	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	56.6	117.7	408.3	4.37	7.2	3.5	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.8	113.5	358.3	4.21	7.3	3.2	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.8	108.7	305.6	4.00	7.5	2.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.8	110.9	297.7	4.01	8.1	2.7	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.6	107.2	259.8	3.83	8.2	2.4	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.1	101.8	217.2	3.57	8.3	2.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.7	102.0	207.8	3.51	8.8	2.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.7	97.9	182.7	3.33	8.8	1.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.0	93.6	159.3	3.15	8.9	1.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.8	87.8	124.5	2.85	9.0	1.4	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.7	82.8	100.1	2.60	9.4	1.2	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	52.4	103.8	337.1	3.96	6.4	3.2	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	48.1	102.2	314.6	3.89	6.5	3.1	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.8	100.4	291.5	3.82	6.7	2.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	61.4	94.8	325.0	3.67	5.3	3.4	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	56.2	93.0	302.9	3.62	5.4	3.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	51.0	91.3	280.3	3.56	5.5	3.1	9.40	8.00	8.50	0.715	3.54
29 T	28.97	46.5	89.7	260.0	3.50	5.6	2.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	39.9	89.9	240.4	3.46	6.0	2.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.0	88.0	220.3	3.38	6.1	2.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.3	86.4	201.2	3.29	6.2	2.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.8	83.9	181.9	3.17	6.3	2.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.8	86.1	186.3	3.21	6.5	2.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.7	83.0	161.4	3.05	6.5	1.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.7	81.7	143.9	2.93	6.9	1.8	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.4	77.6	121.5	2.74	7.0	1.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.2	75.3	109.6	2.62	7.2	1.5	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.9	71.3	93.4	2.45	7.3	1.3	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.0	67.0	73.8	2.23	7.4	1.1	2.19	7.90	3.94	0.204	1.34



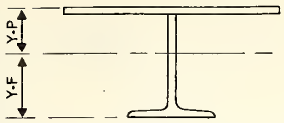
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 2 1/4 x 6.51-T	5.19	6.4	58.3	49.6	1.87	7.7	0.8	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	27.5	74.6	153.1	2.89	5.6	2.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.6	73.2	139.2	2.81	5.7	1.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.3	70.8	122.7	2.68	5.8	1.7	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.8	60.2	69.0	2.13	6.4	1.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.8	46.4	32.9	1.54	6.9	0.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.4	63.7	114.3	2.52	4.9	1.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.2	61.7	100.6	2.42	5.0	1.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.6	59.8	89.0	2.31	5.1	1.5	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.9	57.5	71.5	2.12	5.6	1.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.1	56.9	71.8	2.12	5.5	1.3	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.1	54.0	61.2	1.99	5.5	1.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.3	50.8	51.7	1.85	5.5	1.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.2	50.6	51.0	1.84	5.6	1.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.8	48.1	43.8	1.72	5.6	0.9	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	6.5	44.7	36.4	1.59	5.6	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.3	44.9	36.3	1.59	5.8	0.8	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.4	34.7	20.3	1.22	6.0	0.6	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	16.0	50.1	68.9	2.02	4.3	1.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.8	48.2	60.1	1.92	4.4	1.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.3	45.4	50.0	1.78	4.4	1.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.9	44.9	46.2	1.73	4.7	1.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.6	42.5	40.1	1.63	4.7	0.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.3	40.1	34.5	1.52	4.7	0.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.6	36.4	26.8	1.37	4.8	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.2	32.5	20.6	1.21	4.9	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.1	35.6	33.6	1.47	3.7	0.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.6	33.3	28.3	1.37	3.7	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.4	31.7	24.7	1.29	3.8	0.8	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.4	29.4	20.8	1.19	3.9	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.3	26.7	16.7	1.09	3.9	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.6	21.0	10.5	0.88	4.1	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.0	16.1	7.2	0.73	3.6	0.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.7	23.8	16.9	1.06	3.0	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.1	20.3	12.2	0.92	3.0	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.9	17.0	8.7	0.79	3.0	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.5	11.5	4.6	0.59	3.2	0.4	0.65	3.00	1.84	0.167	0.34

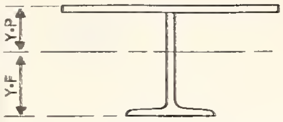


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 I-T	99.55	414.0	533.6	7,209.4	12.67	17.4	13.5	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	389.2	521.8	6,863.1	12.61	17.6	13.2	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	363.3	509.7	6,495.8	12.50	17.9	12.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	335.5	496.7	6,096.3	12.34	18.2	12.3	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	425.2	477.8	6,188.4	11.64	14.6	13.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	330.5	460.4	5,369.0	11.49	16.2	11.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	297.3	444.9	4,933.4	11.39	16.6	11.1	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	273.6	433.8	4,618.0	11.27	16.9	10.6	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	352.2	416.1	4,743.0	10.62	13.5	11.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	323.2	411.6	4,512.5	10.55	14.0	11.0	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	298.2	401.3	4,240.5	10.51	14.2	10.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	272.4	391.0	3,953.7	10.43	14.5	10.1	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	248.9	390.7	3,787.0	10.24	15.2	9.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	223.2	378.4	3,468.8	10.11	15.5	9.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	201.6	367.8	3,193.2	9.94	15.8	8.7	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	269.6	346.5	3,278.7	9.28	12.2	9.5	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	222.5	339.5	2,925.4	8.98	13.1	8.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	191.2	324.6	2,585.0	8.82	13.5	8.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	173.8	323.5	2,471.7	8.86	14.2	7.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	162.2	317.8	2,335.4	8.76	14.4	7.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	147.7	310.4	2,162.1	8.61	14.6	7.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	226.9	287.2	2,350.6	7.90	10.4	8.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	239.6	303.7	2,558.8	8.16	10.7	8.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	221.2	296.4	2,399.7	8.10	10.8	8.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	202.8	289.0	2,238.9	8.02	11.0	7.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	176.6	285.9	2,068.0	7.87	11.7	7.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	160.9	278.6	1,916.4	7.78	11.9	6.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	146.4	271.7	1,771.7	7.66	12.1	6.5	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	134.2	266.1	1,648.7	7.55	12.3	6.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	126.1	267.6	1,606.7	7.53	12.8	6.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	115.5	261.8	1,502.4	7.40	13.0	5.7	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	105.1	256.4	1,388.4	7.25	13.2	5.4	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	203.7	263.0	1,983.9	7.38	9.7	7.5	20.76	16.66	11.53	0.960	10.07
65 T	65.04	185.8	258.1	1,855.7	7.31	10.0	7.2	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	183.2	258.0	1,815.5	7.25	9.9	7.0	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	167.8	251.8	1,690.2	7.16	10.1	6.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	146.0	249.1	1,559.6	7.00	10.7	6.3	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	133.0	242.8	1,442.7	6.90	10.8	5.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	120.1	236.6	1,324.5	6.77	11.0	5.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	108.9	231.1	1,220.5	6.65	11.2	5.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	95.4	230.8	1,138.5	6.58	11.9	4.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	86.0	225.5	1,042.2	6.43	12.1	4.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	76.7	220.5	946.3	6.26	12.3	4.3	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	68.0	213.9	849.9	6.03	12.5	4.0	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	152.3	228.4	1,427.4	6.61	9.4	6.3	17.07	15.00	10.50	0.850	8.46
54 T	53.99	139.5	224.5	1,336.6	6.51	9.6	6.0	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	115.1	210.1	1,099.4	6.16	9.6	5.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	104.5	205.0	1,005.1	6.04	9.6	4.9	11.92	13.90	10.00	0.643	5.25



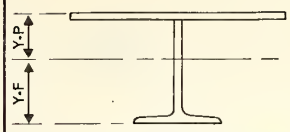
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

25.5# PLATE WEIGHT

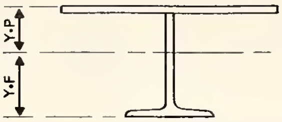
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53 I-T	36.44	89.9	200.9	904.7	5.86	10.1	4.5	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	81.4	196.5	830.1	5.73	10.2	4.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	72.9	191.9	755.6	5.57	10.4	3.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	65.1	192.4	716.9	5.51	11.0	3.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	58.1	187.6	648.6	5.34	11.2	3.5	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	50.6	181.7	573.6	5.11	11.3	3.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	105.3	177.5	844.2	5.36	8.0	4.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	94.2	173.7	773.6	5.26	8.2	4.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	84.6	170.2	710.7	5.15	8.4	4.2	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	75.2	173.0	671.0	5.12	8.9	3.9	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	67.6	169.0	612.7	4.99	9.1	3.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	60.3	165.2	555.2	4.86	9.2	3.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	54.5	165.0	527.4	4.79	9.7	3.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.9	159.8	461.0	4.59	9.8	2.9	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.8	154.9	405.9	4.38	9.9	2.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.4	149.2	344.2	4.09	10.6	2.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.8	143.0	297.5	3.86	10.7	2.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.5	135.4	252.4	3.60	10.8	1.9	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.9	130.1	216.4	3.38	10.9	1.7	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	73.3	149.1	552.4	4.58	7.5	3.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	68.4	147.3	522.9	4.52	7.6	3.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	62.1	144.5	482.6	4.42	7.8	3.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	57.4	140.0	437.5	4.24	7.6	3.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	49.4	134.9	382.2	4.06	7.7	2.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	41.3	129.0	324.3	3.83	7.9	2.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.2	131.4	314.6	3.82	8.5	2.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.0	126.8	273.3	3.64	8.5	2.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.4	119.8	227.5	3.38	8.6	1.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.0	119.7	217.2	3.31	9.1	1.8	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.0	114.6	190.4	3.13	9.1	1.7	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.2	109.1	165.7	2.95	9.1	1.5	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.0	101.5	128.8	2.66	9.2	1.3	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	53.2	123.6	362.7	3.85	6.8	2.9	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	48.8	121.7	337.4	3.77	6.9	2.8	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.4	119.5	311.6	3.68	7.0	2.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	62.6	113.0	354.0	3.62	5.7	3.1	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	57.3	111.0	328.8	3.55	5.7	3.0	10.43	8.08	8.54	0.795	3.92
32 T	31.96	51.9	108.8	303.1	3.48	5.8	2.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.2	106.9	280.1	3.41	5.9	2.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.5	106.8	257.3	3.35	6.3	2.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.5	104.5	234.9	3.25	6.4	2.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.7	102.4	213.8	3.15	6.5	2.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.1	99.2	192.6	3.03	6.6	1.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.2	101.7	197.1	3.06	6.7	1.9	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.0	97.7	170.0	2.90	6.8	1.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.0	95.6	150.8	2.77	7.2	1.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.6	90.3	126.8	2.58	7.2	1.4	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.4	87.2	114.2	2.46	7.4	1.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.0	82.1	97.0	2.29	7.4	1.2	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.1	76.3	76.3	2.07	7.5	1.0	2.19	7.90	3.94	0.204	1.34



PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	27.8	88.2	162.7	2.77	5.8	1.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.9	86.2	147.4	2.67	5.9	1.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.6	83.1	129.4	2.54	6.0	1.6	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.9	68.9	71.8	1.99	6.6	1.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.9	50.7	33.8	1.42	7.0	0.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.7	75.0	121.5	2.41	5.1	1.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.5	72.3	106.5	2.30	5.2	1.5	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.8	69.8	93.8	2.19	5.3	1.3	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.0	66.1	74.8	1.99	5.7	1.1	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.3	65.7	75.1	2.00	5.6	1.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.3	61.8	63.8	1.86	5.7	1.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.4	57.7	53.8	1.72	5.7	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.3	57.4	53.1	1.72	5.7	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.9	54.1	45.4	1.60	5.7	0.8	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.6	49.7	37.7	1.47	5.7	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.4	49.9	37.5	1.47	5.9	0.8	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.3	58.4	73.0	1.92	4.5	1.3	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.0	55.8	63.4	1.81	4.5	1.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.5	52.1	52.5	1.67	4.6	1.0	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.1	51.2	48.3	1.62	4.8	0.9	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.7	48.1	41.9	1.52	4.8	0.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.4	45.0	35.9	1.42	4.8	0.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.7	40.2	27.9	1.27	4.9	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.3	35.2	21.4	1.12	5.0	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.3	40.4	35.4	1.38	3.8	0.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.7	37.5	29.7	1.28	3.8	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.6	35.4	25.9	1.20	4.0	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.5	32.5	21.7	1.11	4.0	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.4	29.1	17.4	1.01	4.0	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.7	22.2	11.0	0.81	4.1	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.1	16.9	7.6	0.68	3.7	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.8	26.5	17.9	1.00	3.1	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.2	22.2	12.9	0.86	3.0	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.0	18.2	9.2	0.74	3.0	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.5	11.9	4.9	0.55	3.2	0.4	0.65	3.00	1.84	0.167	0.34



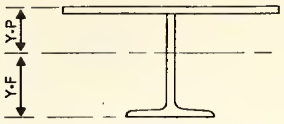
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 I-T	99.55	423.4	613.2	7,761.0	12.69	18.3	12.7	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	397.9	600.9	7,384.2	12.61	18.6	12.3	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	371.2	587.9	6,983.3	12.48	18.8	11.9	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	342.8	573.8	6,546.9	12.29	19.1	11.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	434.2	551.2	6,695.4	11.70	15.4	12.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	337.5	532.0	5,775.8	11.46	17.1	10.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	303.3	515.7	5,298.9	11.32	17.5	10.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	279.0	503.8	4,953.3	11.17	17.8	9.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	359.2	482.4	5,132.3	10.64	14.3	10.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	329.6	477.2	4,871.4	10.54	14.8	10.2	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	303.9	466.5	4,572.2	10.47	15.0	9.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	277.3	455.5	4,255.9	10.36	15.3	9.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	253.8	454.0	4,064.1	10.15	16.0	9.0	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	227.4	440.8	3,715.0	9.98	16.3	8.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	205.1	429.2	3,412.8	9.79	16.6	8.0	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	274.5	403.6	3,543.8	9.26	12.9	8.8	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	226.9	394.4	3,143.8	8.91	13.9	8.0	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	194.6	378.5	2,769.7	8.71	14.2	7.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	176.8	377.8	2,640.7	8.71	14.9	7.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	164.9	371.5	2,491.0	8.59	15.1	6.7	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	150.0	363.4	2,300.9	8.42	15.3	6.3	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	231.4	335.3	2,547.9	7.88	11.0	7.6	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	244.2	353.6	2,768.4	8.15	11.3	7.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	225.3	345.7	2,592.3	8.06	11.5	7.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	206.3	337.8	2,414.1	7.96	11.7	7.1	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	179.7	333.5	2,219.9	7.78	12.4	6.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	163.6	325.7	2,052.8	7.66	12.5	6.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	148.7	318.1	1,893.5	7.52	12.7	6.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	136.2	311.9	1,758.0	7.39	12.9	5.6	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	128.0	313.4	1,720.3	7.35	13.4	5.5	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	117.2	306.9	1,595.4	7.20	13.6	5.2	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	106.6	300.8	1,470.6	7.04	13.8	4.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	207.6	307.7	2,150.6	7.36	10.4	7.0	20.76	16.66	11.53	0.960	10.07
65 T	65.04	189.3	302.2	2,006.2	7.26	10.6	6.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	186.4	301.7	1,959.5	7.20	10.5	6.5	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	170.6	294.8	1,820.5	7.08	10.7	6.2	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	148.5	291.0	1,672.3	6.90	11.3	5.7	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	135.2	284.1	1,543.5	6.77	11.4	5.4	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	122.0	277.1	1,413.3	6.63	11.6	5.1	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	110.5	271.0	1,299.0	6.48	11.8	4.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	96.8	270.5	1,206.4	6.39	12.5	4.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	87.1	264.4	1,101.3	6.21	12.6	4.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	77.7	258.7	996.8	6.03	12.8	3.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	68.9	250.7	892.9	5.78	13.0	3.6	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	155.0	267.8	1,539.9	6.54	9.9	5.8	17.07	15.00	10.50	0.850	8.46
54 T	53.99	141.9	263.2	1,438.2	6.43	10.1	5.5	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	116.8	246.6	1,176.8	6.04	10.1	4.8	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	105.8	240.7	1,072.5	5.90	10.1	4.5	11.92	13.90	10.00	0.643	5.25



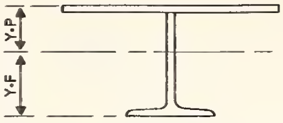
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53 1-T	36.44	91.1	235.6	961.0	5.69	10.5	4.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	82.4	230.5	879.3	5.54	10.7	3.8	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	73.7	225.0	797.9	5.37	10.8	3.5	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	65.8	225.4	754.6	5.30	11.5	3.3	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	58.7	219.7	680.6	5.11	11.6	3.1	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	51.2	212.4	600.1	4.87	11.7	2.8	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	107.0	208.6	907.9	5.27	8.5	4.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	95.7	204.2	829.0	5.15	8.7	4.1	12.35	12.04	9.01	0.772	5.65
12 x 8 x 50 I-T	33.81	76.1	202.8	712.3	4.97	9.4	3.5	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	68.4	198.0	648.4	4.82	9.5	3.3	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	61.0	193.5	585.6	4.67	9.6	3.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	55.2	193.0	554.7	4.60	10.1	2.9	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	47.4	186.7	483.0	4.37	10.2	2.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	41.2	180.5	423.7	4.16	10.3	2.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.8	173.0	357.8	3.87	10.9	2.1	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	28.1	165.2	308.5	3.64	11.0	1.9	4.34	12.16	4.01	0.349	2.91
16.5I-T	13.11	23.7	155.7	261.0	3.38	11.0	1.7	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	20.1	148.9	223.1	3.17	11.1	1.5	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	74.3	175.1	590.0	4.46	7.9	3.4	10.73	10.62	8.29	0.740	4.83
34 T	34.03	69.4	172.9	557.2	4.39	8.0	3.2	10.01	10.57	8.27	0.685	4.54
31 T	31.01	62.9	169.6	512.8	4.28	8.2	3.0	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	58.1	163.9	463.7	4.10	8.0	2.8	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	50.0	157.7	403.4	3.90	8.1	2.6	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	41.8	150.3	340.8	3.66	8.2	2.3	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.6	152.8	329.4	3.64	8.8	2.2	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	32.3	147.0	285.2	3.45	8.8	1.9	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	26.6	138.3	236.5	3.19	8.9	1.7	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	24.3	137.7	225.4	3.12	9.3	1.6	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	21.2	131.3	197.2	2.95	9.3	1.5	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	18.4	124.5	171.2	2.77	9.3	1.4	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	14.1	114.5	132.5	2.48	9.4	1.2	2.63	9.86	3.95	0.204	1.77
9 x 8 3/4 x 32 T	31.96	58.8	144.5	402.2	3.77	6.8	2.8	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	54.0	144.9	385.7	3.73	7.1	2.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	49.4	142.4	357.8	3.64	7.2	2.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.9	139.7	329.4	3.54	7.3	2.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	63.7	132.7	380.6	3.54	6.0	2.9	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	58.2	130.2	352.5	3.46	6.1	2.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	52.7	127.6	323.8	3.38	6.1	2.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.8	125.1	298.3	3.30	6.2	2.4	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	41.1	124.7	272.5	3.22	6.6	2.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.9	121.7	248.0	3.12	6.7	2.0	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.1	119.0	224.9	3.01	6.8	1.9	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.5	114.9	202.1	2.88	6.9	1.8	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	29.5	117.6	206.5	2.91	7.0	1.8	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	25.2	112.5	177.5	2.74	7.0	1.6	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	21.2	109.6	156.8	2.61	7.4	1.4	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.8	102.8	131.5	2.42	7.4	1.3	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.5	98.8	118.2	2.31	7.6	1.2	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.2	92.3	100.3	2.14	7.6	1.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.3	84.7	78.6	1.93	7.7	0.9	2.19	7.90	3.94	0.204	1.34

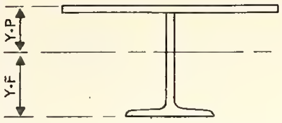


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	28.2	102.1	171.2	2.64	6.1	1.7	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.2	99.5	154.6	2.54	6.1	1.6	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.8	95.4	135.3	2.41	6.2	1.4	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.0	76.9	74.2	1.86	6.7	1.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.9	54.1	34.8	1.31	7.0	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	24.0	86.5	128.0	2.30	5.3	1.5	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.8	83.0	111.7	2.18	5.4	1.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.1	79.6	98.2	2.07	5.4	1.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.2	74.4	77.7	1.87	5.9	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.5	74.0	78.2	1.88	5.8	1.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.4	69.1	66.2	1.75	5.8	1.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.6	63.9	55.7	1.61	5.8	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.4	63.6	55.0	1.60	5.8	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.0	59.3	47.0	1.50	5.9	0.8	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.7	54.0	38.9	1.37	5.8	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.5	54.1	38.8	1.37	6.0	0.7	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.5	66.4	76.7	1.82	4.6	1.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.2	63.1	66.4	1.71	4.7	1.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.7	58.3	54.8	1.58	4.7	0.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.2	56.9	50.4	1.52	4.9	0.9	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.8	53.2	43.5	1.43	4.9	0.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.6	49.3	37.3	1.33	4.9	0.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.8	43.4	28.9	1.18	5.0	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.3	37.4	22.2	1.05	5.1	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.4	44.9	37.1	1.30	3.9	0.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.9	41.3	31.1	1.20	3.9	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.7	38.6	27.1	1.13	4.0	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.6	35.0	22.7	1.04	4.0	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.5	31.0	18.2	0.94	4.1	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.7	23.1	11.5	0.76	4.2	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.2	17.5	8.0	0.64	3.7	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	6.0	28.9	18.9	0.94	3.2	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.4	23.8	13.6	0.81	3.1	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.1	19.2	9.7	0.69	3.1	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.6	12.3	5.3	0.52	3.3	0.4	0.65	3.00	1.84	0.167	0,34



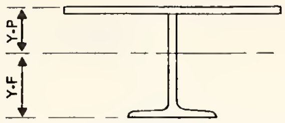
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 1-T	99.55	431.4	698.5	8,280.9	12.65	19.2	11.9	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	405.3	685.5	7,872.7	12.54	19.4	11.5	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	378.1	671.6	7,438.2	12.39	19.7	11.1	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	349.0	656.2	6,965.1	12.19	20.0	10.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	441.9	629.6	7,174.4	11.69	16.2	11.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	343.5	608.5	6,154.4	11.38	17.9	10.1	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	308.4	591.2	5,636.0	11.20	18.3	9.5	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	283.5	578.4	5,260.5	11.03	18.6	9.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	365.1	553.2	5,496.5	10.60	15.1	9.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	335.1	547.2	5,205.5	10.48	15.5	9.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	308.7	535.9	4,878.8	10.38	15.8	9.1	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	281.5	524.3	4,532.8	10.24	16.1	8.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	257.8	521.2	4,317.9	10.02	16.7	8.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	230.8	507.1	3,938.4	9.82	17.1	7.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	208.1	494.3	3,610.5	9.60	17.3	7.3	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	278.7	464.5	3,788.7	9.18	13.6	8.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	230.6	452.8	3,344.2	8.81	14.5	7.4	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	197.5	435.6	2,937.0	8.56	14.9	6.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	179.3	435.2	2,792.3	8.53	15.6	6.4	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	167.2	428.3	2,629.9	8.39	15.7	6.1	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	152.0	419.2	2,424.1	8.20	15.9	5.8	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	235.2	386.5	2,730.3	7.83	11.6	7.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	248.0	406.6	2,962.5	8.09	11.9	7.3	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	228.7	398.0	2,769.5	7.98	12.1	7.0	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	209.3	389.4	2,574.1	7.86	12.3	6.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	182.4	383.9	2,357.8	7.65	12.9	6.1	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	165.9	375.5	2,175.6	7.52	13.1	5.8	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	150.6	367.0	2,002.3	7.35	13.3	5.5	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	137.8	360.1	1,855.0	7.20	13.5	5.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	129.6	361.5	1,812.1	7.16	14.0	5.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	118.7	354.1	1,677.1	6.99	14.1	4.7	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	107.8	347.2	1,542.4	6.81	14.3	4.4	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	210.9	355.2	2,304.0	7.30	10.9	6.5	20.76	16.66	11.53	0.960	10.07
65 T	65.04	192.2	348.9	2,143.8	7.18	11.2	6.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 1-T	64.24	189.1	347.9	2,091.0	7.11	11.1	6.0	18.89	16.32	11.53	0.875	8.73
88 1-T	59.02	172.9	340.3	1,938.7	6.97	11.2	5.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	150.6	335.2	1,774.0	6.77	11.8	5.3	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	137.0	327.5	1,633.8	6.63	11.9	5.0	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	123.5	319.7	1,492.2	6.46	12.1	4.7	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	111.8	312.7	1,368.3	6.30	12.2	4.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	97.9	311.9	1,265.8	6.18	12.9	4.1	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	88.1	304.9	1,152.7	5.99	13.1	3.8	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	78.4	298.2	1,040.3	5.79	13.3	3.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	69.5	288.6	929.7	5.54	13.4	3.2	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	157.3	309.4	1,642.0	6.44	10.4	5.3	17.07	15.00	10.50	0.850	8.46
54 T	53.99	143.9	304.0	1,529.8	6.31	10.6	5.0	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	118.2	284.8	1,245.6	5.90	10.5	4.4	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	107.0	278.1	1,132.0	5.73	10.6	4.1	11.92	13.90	10.00	0.643	5.25



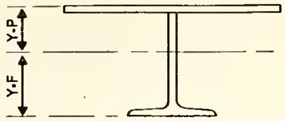
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53 I-T	36.44	92.1	271.7	1,010.4	5.52	11.0	3.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	83.2	265.7	922.1	5.35	11.1	3.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	74.4	259.3	834.5	5.17	11.2	3.2	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	66.5	259.3	787.0	5.08	11.8	3.0	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	59.3	252.5	708.1	4.89	11.9	2.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	51.7	243.6	622.7	4.64	12.1	2.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	108.4	241.2	965.0	5.16	8.9	4.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	96.9	236.0	878.3	5.02	9.1	3.7	12.35	12.04	9.01	0.772	5.65
38 T	38.01	86.9	231.0	801.6	4.88	9.2	3.5	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	76.9	233.6	748.4	4.80	9.7	3.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	69.1	227.9	679.5	4.65	9.8	3.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	61.6	222.4	611.9	4.49	9.9	2.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	55.7	221.5	578.2	4.40	10.4	2.6	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	47.9	213.8	501.7	4.17	10.5	2.3	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	41.6	206.2	439.0	3.96	10.6	2.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	33.1	196.5	369.5	3.67	11.2	1.9	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.3	186.9	317.8	3.44	11.2	1.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.9	175.3	268.4	3.19	11.2	1.5	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.3	166.6	228.9	2.98	11.3	1.4	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	75.2	202.0	623.3	4.33	8.3	3.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	70.2	199.3	587.5	4.25	8.4	2.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	63.6	195.2	539.1	4.13	8.5	2.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	58.7	188.3	486.6	3.95	8.3	2.6	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	50.5	180.8	421.9	3.75	8.4	2.3	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	42.1	171.7	355.0	3.50	8.4	2.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	38.0	174.1	342.2	3.47	9.0	2.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.6	166.8	295.3	3.27	9.1	1.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.9	156.1	244.3	3.02	9.1	1.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.5	155.0	232.4	2.95	9.5	1.5	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.4	147.1	203.0	2.78	9.5	1.4	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.6	138.8	176.0	2.61	9.5	1.3	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.2	126.2	135.8	2.33	9.5	1.1	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	54.6	166.5	405.8	3.60	7.4	2.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	50.0	163.4	375.6	3.50	7.5	2.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	45.4	160.0	345.0	3.40	7.6	2.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	64.5	152.9	404.4	3.45	6.3	2.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	58.9	149.9	373.5	3.37	6.3	2.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	53.3	146.6	342.1	3.27	6.4	2.3	9.40	8.00	8.50	0.715	3.54
29 T	28.97	48.4	143.6	314.3	3.18	6.5	2.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	41.5	142.6	285.7	3.09	6.9	2.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	37.4	138.9	259.3	2.98	6.9	1.9	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.4	135.3	234.6	2.87	7.0	1.7	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.8	130.3	210.4	2.75	7.1	1.6	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.8	133.2	214.8	2.77	7.2	1.6	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.5	126.7	184.0	2.60	7.2	1.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.4	122.7	162.1	2.47	7.6	1.3	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.9	114.4	135.6	2.29	7.6	1.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.7	109.4	121.8	2.17	7.8	1.1	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.3	101.5	103.2	2.02	7.7	1.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.4	91.9	80.6	1.81	7.8	0.9	2.19	7.90	3.94	0.204	1.34

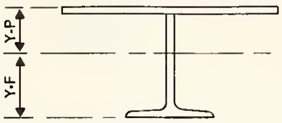


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 19 T	19.01	28.5	115.7	178.7	2.52	6.3	1.5	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.5	112.2	161.0	2.42	6.3	1.4	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.1	107.1	140.5	2.28	6.4	1.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.2	84.0	76.4	1.75	6.8	0.9	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	5.0	56.6	35.7	1.23	7.1	0.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	24.3	97.5	133.7	2.19	5.5	1.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.0	93.1	116.4	2.07	5.5	1.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.3	88.8	102.0	1.96	5.6	1.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.4	81.8	80.4	1.77	6.0	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.7	81.5	80.9	1.77	5.9	1.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.6	75.5	68.5	1.64	5.9	0.9	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.7	69.3	57.5	1.52	5.9	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.6	68.8	56.8	1.51	5.9	0.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.1	63.7	48.4	1.40	5.9	0.8	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.8	57.4	40.1	1.29	5.9	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.6	57.5	39.9	1.28	6.1	0.7	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.8	73.9	80.0	1.73	4.8	1.1	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.4	69.7	69.1	1.63	4.8	1.0	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.8	63.9	56.9	1.49	4.8	0.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.4	62.0	52.2	1.44	5.0	0.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	9.0	57.4	45.1	1.34	5.0	0.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.7	52.8	38.7	1.25	5.0	0.7	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.9	45.9	29.9	1.11	5.0	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.4	39.0	22.9	0.98	5.2	0.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.6	48.8	38.7	1.23	4.0	0.8	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	8.1	44.4	32.4	1.14	4.0	0.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.8	41.2	28.2	1.07	4.1	0.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.8	37.1	23.7	0.98	4.1	0.6	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.6	32.5	18.9	0.89	4.1	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.8	23.8	12.0	0.72	4.2	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.3	18.0	8.5	0.60	3.8	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	6.1	30.9	19.9	0.89	3.2	0.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.5	25.1	14.4	0.77	3.2	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.3	20.0	10.3	0.66	3.2	0.5	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.7	12.8	5.7	0.50	3.3	0.4	0.65	3.00	1.84	0.167	0.34



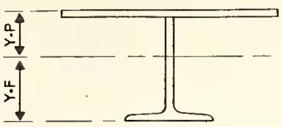
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	879.3	1,117.6	16,915.9	14.46	19.2	15.1	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	808.9	1,087.5	15,824.6	14.35	19.6	14.6	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	737.1	1,062.0	14,739.9	14.23	20.0	13.9	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	560.4	1,014.5	12,409.6	13.90	22.1	12.2	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	522.8	991.6	11,698.8	13.74	22.4	11.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	475.4	969.5	10,838.3	13.47	22.8	11.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	588.0	926.2	11,061.2	12.90	18.8	11.9	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	444.9	889.7	9,245.5	12.42	20.8	10.4	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	417.6	875.1	8,773.0	12.28	21.0	10.0	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	389.3	858.9	8,270.8	12.09	21.2	9.6	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	359.3	840.4	7,725.4	11.85	21.5	9.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	454.6	805.7	8,066.3	11.53	17.7	10.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	353.4	779.4	6,845.3	11.09	19.4	8.8	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	316.7	759.6	6,243.7	10.85	19.7	8.2	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	290.9	744.5	5,809.5	10.63	20.0	7.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	374.8	711.5	6,165.6	10.40	16.4	8.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	344.0	703.4	5,815.5	10.23	16.9	8.3	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	316.4	690.7	5,432.9	10.08	17.2	7.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	288.2	677.2	5,028.2	9.90	17.4	7.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	264.5	670.7	4,771.7	9.66	18.0	7.1	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	236.4	653.9	4,333.2	9.41	18.3	6.6	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	213.0	638.2	3,956.4	9.14	18.6	6.2	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	285.5	599.9	4,231.4	8.93	14.8	7.1	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	236.6	582.2	3,703.7	8.50	15.7	6.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	202.3	561.6	3,232.2	8.19	16.0	5.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	183.4	561.5	3,057.0	8.11	16.7	5.4	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	170.9	552.8	2,870.7	7.95	16.8	5.2	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	155.2	541.3	2,635.7	7.73	17.0	4.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	241.5	499.9	3,060.3	7.62	12.7	6.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	254.4	524.2	3,314.9	7.88	13.0	6.3	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	234.2	514.0	3,088.3	7.74	13.2	6.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	214.1	503.5	2,859.2	7.58	13.4	5.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	186.7	494.8	2,601.9	7.33	13.9	5.3	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	169.5	484.5	2,390.7	7.16	14.1	4.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	153.8	473.8	2,191.1	6.96	14.3	4.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	140.6	464.8	2,021.9	6.79	14.4	4.3	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	132.3	465.9	1,969.5	6.73	14.9	4.2	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	121.0	456.2	1,816.4	6.54	15.0	4.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	109.8	446.9	1,663.9	6.34	15.2	3.7	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	216.3	460.1	2,580.1	7.09	11.9	5.6	20.76	16.66	11.53	0.960	10.07
65 T	65.04	196.9	451.8	2,389.5	6.93	12.1	5.3	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	193.4	449.6	2,325.7	6.85	12.0	5.2	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	176.7	440.0	2,147.8	6.69	12.2	4.9	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	154.1	431.8	1,952.8	6.46	12.7	4.5	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	140.0	422.0	1,791.1	6.29	12.8	4.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	126.0	411.9	1,628.5	6.09	12.9	4.0	13.23	16.00	8.50	0.715	7.08



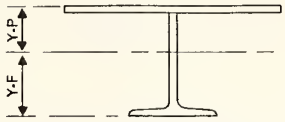
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

35.7# PLATE WEIGHT

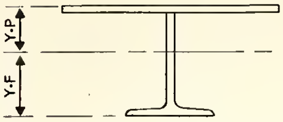
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
16 x 8 1/2 x 58 I-T	40.79	114.0	402.6	1,486.8	5.91	13.0	3.7	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	99.7	400.6	1,366.5	5.75	13.7	3.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	89.6	390.9	1,239.2	5.55	13.8	3.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	79.8	381.4	1,113.1	5.33	14.0	2.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	70.7	367.8	991.1	5.08	14.0	2.7	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	161.0	400.4	1,822.7	6.18	11.3	4.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	147.3	393.0	1,690.9	6.03	11.5	4.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	120.6	367.3	1,364.9	5.57	11.3	3.7	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	108.9	358.2	1,234.2	5.39	11.3	3.4	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	93.8	348.5	1,094.6	5.15	11.7	3.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	84.7	340.1	994.7	4.97	11.8	2.9	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	75.7	331.0	896.2	4.77	11.8	2.7	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	67.6	329.9	841.4	4.67	12.4	2.6	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	60.2	320.0	754.0	4.47	12.5	2.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	52.5	307.0	660.2	4.22	12.6	2.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	110.8	311.2	1,064.6	4.89	9.6	3.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	98.9	303.9	963.4	4.73	9.7	3.2	12.35	12.04	9.01	0.772	5.65
38 T	38.01	88.6	296.7	874.8	4.57	9.9	2.9	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	78.3	298.3	810.0	4.47	10.3	2.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	70.3	290.2	732.2	4.30	10.4	2.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	62.5	282.2	656.1	4.13	10.5	2.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	56.6	280.0	617.7	4.03	10.9	2.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	48.6	268.4	533.2	3.80	11.0	2.0	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	42.2	257.0	464.5	3.58	11.0	1.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	33.6	242.0	389.1	3.31	11.6	1.6	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.8	228.0	333.6	3.09	11.6	1.5	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.3	211.5	281.0	2.85	11.5	1.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.6	198.5	238.9	2.65	11.6	1.2	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	76.8	258.6	680.5	4.06	8.9	2.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	71.6	254.6	639.3	3.97	8.9	2.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	64.8	248.5	584.1	3.83	9.0	2.4	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	59.8	238.6	525.7	3.66	8.8	2.2	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	51.4	227.6	453.2	3.45	8.8	2.0	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	42.9	214.2	379.2	3.20	8.8	1.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	38.7	216.0	363.8	3.16	9.4	1.7	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	33.1	205.1	312.6	2.96	9.4	1.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	27.4	189.5	257.5	2.71	9.4	1.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.9	187.1	244.5	2.65	9.8	1.3	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.8	175.8	213.2	2.49	9.8	1.2	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.9	164.2	184.5	2.33	9.8	1.1	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.5	145.8	141.8	2.07	9.8	1.0	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	55.7	210.8	440.5	3.34	7.9	2.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	51.0	206.1	406.1	3.24	8.0	2.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	46.3	200.8	371.5	3.13	8.0	1.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	66.1	195.2	446.1	3.26	6.7	2.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	60.3	190.6	410.2	3.16	6.8	2.2	10.43	8.08	8.54	0.795	3.92
32 T	31.96	54.5	185.7	373.8	3.06	6.9	2.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	49.4	181.0	341.9	2.96	6.9	1.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	42.4	178.3	308.4	2.85	7.3	1.7	7.35	8.13	7.07	0.628	3.08



PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 7 x 22.5 T	22.51	38.1	172.6	278.8	2.74	7.3	1.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	34.1	167.1	251.2	2.62	7.4	1.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	30.4	159.7	224.7	2.50	7.4	1.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	30.4	162.9	229.0	2.52	7.5	1.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.0	153.3	195.3	2.35	7.5	1.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.8	146.6	171.4	2.22	7.8	1.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	18.3	134.7	143.0	2.05	7.8	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	16.0	127.6	128.2	1.95	8.0	1.0	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.7	116.8	108.5	1.80	7.9	0.9	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.6	103.2	84.5	1.61	8.0	0.8	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	29.1	141.5	191.7	2.30	6.6	1.4	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.0	136.1	172.0	2.20	6.6	1.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.5	128.5	149.6	2.07	6.6	1.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.5	95.3	80.7	1.56	7.0	0.8	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	24.9	118.1	143.8	2.00	5.8	1.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.5	111.4	124.7	1.88	5.8	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.7	105.0	108.9	1.77	5.8	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.7	94.3	85.4	1.59	6.2	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.0	94.2	86.0	1.59	6.1	0.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.9	86.0	72.6	1.47	6.1	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.0	77.6	61.0	1.36	6.1	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.9	77.1	60.2	1.35	6.1	0.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.4	70.2	51.4	1.25	6.1	0.7	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	7.1	62.3	42.6	1.15	6.0	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.8	62.3	42.4	1.14	6.2	0.7	1.72	6.00	3.06	0.175	1.05



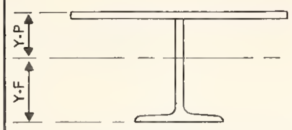
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	904.1	1,371.5	18,798.6	14.43	20.8	13.7	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	830.8	1,338.8	17,553.4	14.27	21.1	13.1	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	756.1	1,310.4	16,301.7	14.08	21.6	12.4	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	574.4	1,256.9	13,600.8	13.59	23.7	10.8	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	535.5	1,231.4	12,800.6	13.39	23.9	10.4	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	486.7	1,204.9	11,821.3	13.07	24.3	9.8	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 1-T	121.81	602.0	1,149.7	12,200.6	12.68	20.3	10.6	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	455.3	1,105.1	10,093.3	12.07	22.2	9.1	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	427.1	1,088.4	9,557.9	11.90	22.4	8.8	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	398.0	1,069.2	8,991.1	11.68	22.6	8.4	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	367.2	1,046.8	8,378.2	11.41	22.8	8.0	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	464.5	1,003.9	8,853.6	11.25	19.1	8.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	361.0	970.7	7,441.3	10.70	20.6	7.7	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	323.1	947.5	6,760.7	10.41	20.9	7.1	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	296.6	929.2	6,272.3	10.16	21.1	6.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	382.3	888.8	6,747.6	10.08	17.6	7.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	350.8	878.1	6,342.3	9.88	18.1	7.2	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	322.4	863.3	5,906.0	9.70	18.3	6.8	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	293.3	847.0	5,446.4	9.47	18.6	6.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	269.6	836.3	5,154.5	9.23	19.1	6.2	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	240.7	815.9	4,662.1	8.94	19.4	5.7	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	216.7	796.2	4,241.7	8.65	19.6	5.3	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	290.7	750.2	4,609.8	8.59	15.9	6.1	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	241.3	724.9	4,008.4	8.13	16.6	5.5	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	205.9	699.6	3,477.8	7.77	16.9	5.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	186.5	699.1	3,274.9	7.66	17.6	4.7	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	173.7	688.0	3,067.6	7.48	17.7	4.5	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	157.6	673.0	2,807.3	7.24	17.8	4.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	246.3	625.1	3,343.0	7.34	13.6	5.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	259.3	654.2	3,617.7	7.59	14.0	5.5	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	238.5	641.7	3,359.6	7.42	14.1	5.2	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	217.8	628.6	3,099.4	7.24	14.2	4.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	190.1	615.7	2,806.0	6.97	14.8	4.6	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	172.4	602.7	2,568.7	6.77	14.9	4.3	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	156.2	588.9	2,346.0	6.56	15.0	4.0	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	142.7	577.0	2,157.7	6.36	15.1	3.7	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	134.4	577.3	2,097.4	6.30	15.6	3.6	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	122.8	564.4	1,928.8	6.10	15.7	3.4	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	111.4	551.8	1,761.2	5.89	15.8	3.2	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	200.6	564.3	2,597.0	6.63	12.9	4.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	179.7	548.2	2,322.7	6.36	12.9	4.2	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	156.8	536.0	2,101.5	6.12	13.4	3.9	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	142.4	523.3	1,920.9	5.93	13.5	3.7	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	128.0	509.9	1,739.9	5.72	13.6	3.4	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	115.7	497.4	1,583.0	5.52	13.7	3.2	12.00	15.86	8.46	0.645	6.45



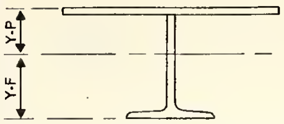
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
16 x 7 x 50 I-T	36.22	101.2	493.0	1,447.6	5.35	14.3	2.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	90.9	479.7	1,308.4	5.14	14.4	2.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	80.8	466.2	1,171.0	4.91	14.5	2.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	71.6	447.5	1,040.0	4.67	14.5	2.3	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	163.9	498.8	1,974.0	5.88	12.0	4.0	17.07	15.00	10.50	0.850	8.46
54 T	53.99	149.9	488.7	1,824.9	5.71	12.2	3.7	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	122.5	454.7	1,462.9	5.24	11.9	3.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	110.5	442.3	1,317.4	5.04	11.9	3.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	95.1	428.1	1,162.8	4.79	12.2	2.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	85.8	416.3	1,053.2	4.60	12.3	2.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	76.7	403.4	945.9	4.41	12.3	2.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	68.5	400.4	884.9	4.30	12.9	2.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	61.0	386.3	790.7	4.10	13.0	2.0	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	53.2	368.2	690.4	3.86	13.0	1.9	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	112.8	385.1	1,147.2	4.62	10.2	3.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	100.5	374.8	1,033.5	4.44	10.3	2.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	90.0	364.5	934.7	4.27	10.4	2.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	79.5	364.1	860.2	4.15	10.8	2.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	71.3	352.7	775.0	3.98	10.9	2.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	63.4	341.1	692.0	3.80	10.9	2.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	57.4	337.0	649.8	3.70	11.3	1.9	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	49.3	320.4	558.7	3.47	11.3	1.7	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	42.8	304.2	485.3	3.26	11.3	1.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.1	282.8	405.2	3.00	11.9	1.4	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.3	263.8	346.8	2.80	11.8	1.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.7	241.9	291.7	2.58	11.8	1.2	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.0	224.1	247.6	2.39	11.8	1.1	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	78.1	316.1	727.7	3.79	9.3	2.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	72.8	310.3	681.9	3.69	9.4	2.2	10.01	10.57	8.27	0.685	4.54
31 T	31.01	65.9	301.5	621.1	3.56	9.4	2.1	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	60.7	288.0	557.8	3.39	9.2	1.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	52.2	272.6	479.0	3.17	9.2	1.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	43.5	253.9	399.2	2.93	9.2	1.6	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	39.3	254.6	381.7	2.88	9.7	1.5	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	33.7	239.2	327.0	2.69	9.7	1.4	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	27.8	218.1	268.8	2.46	9.7	1.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.4	214.0	254.9	2.40	10.0	1.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.2	199.3	222.0	2.25	10.0	1.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.3	184.1	192.0	2.10	10.0	1.0	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.8	160.0	147.4	1.86	9.9	0.9	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	56.7	254.2	469.2	3.10	8.3	1.8	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	51.9	247.2	431.4	3.00	8.3	1.7	8.09	9.06	7.53	0.630	3.53
25 T	24.99	47.1	239.6	393.6	2.88	8.4	1.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	67.5	237.6	481.3	3.06	7.1	2.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	61.5	231.1	441.0	2.96	7.2	1.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	55.5	224.0	400.5	2.85	7.2	1.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	50.4	217.1	365.1	2.74	7.2	1.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	43.2	211.9	327.6	2.63	7.6	1.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	38.8	203.7	295.3	2.52	7.6	1.4	6.62	8.06	7.04	0.563	2.78
20 T	19.99	34.7	195.6	265.3	2.40	7.6	1.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.0	185.6	236.9	2.28	7.7	1.3	5.40	7.93	6.99	0.428	2.31



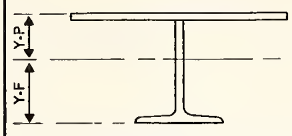
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 6 1/2 x 28 1-T	18.42	31.0	189.1	241.2	2.30	7.8	1.3	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	26.5	175.8	205.2	2.14	7.8	1.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	22.3	166.1	179.6	2.02	8.1	1.1	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	18.7	150.5	149.7	1.86	8.0	1.0	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	16.4	141.4	134.2	1.76	8.2	0.9	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	14.0	127.9	113.6	1.63	8.1	0.9	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.9	110.5	88.5	1.45	8.1	0.8	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	29.7	164.2	202.9	2.11	6.8	1.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.6	156.6	181.8	2.01	6.8	1.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.0	146.1	157.8	1.89	6.9	1.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.8	103.2	84.9	1.41	7.2	0.8	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.5	135.7	152.9	1.84	6.0	1.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	22.0	126.6	132.2	1.72	6.0	1.0	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	19.2	118.0	115.3	1.62	6.0	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	14.2	103.5	90.2	1.44	6.4	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.5	103.6	90.9	1.45	6.3	0.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.3	93.4	76.8	1.34	6.3	0.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.4	83.4	64.6	1.23	6.2	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.2	82.7	63.8	1.23	6.2	0.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.8	74.5	54.5	1.14	6.2	0.7	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	7.4	65.4	45.4	1.04	6.1	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.2	65.3	45.1	1.04	6.3	0.7	1.72	6.00	3.06	0.175	1.05



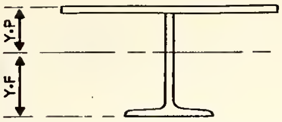
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
33 x 15 3/4 x 240 I-T	170.91	924.3	1,654.0	20,530.0	14.27	22.2	12.4	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	848.5	1,617.9	19,127.8	14.06	22.5	11.8	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	771.4	1,585.8	17,709.4	13.81	23.0	11.2	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	585.5	1,524.2	14,646.9	13.19	25.0	9.6	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	545.6	1,495.5	13,760.9	12.96	25.2	9.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	495.6	1,463.4	12,671.3	12.61	25.6	8.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	613.1	1,396.4	13,209.8	12.36	21.5	9.5	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	463.7	1,341.2	10,828.1	11.64	23.4	8.1	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	434.7	1,321.7	10,233.7	11.44	23.5	7.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	404.9	1,298.8	9,607.5	11.20	23.7	7.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	373.5	1,271.6	8,933.5	10.92	23.9	7.0	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	472.3	1,221.2	9,538.5	10.88	20.2	7.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	367.0	1,178.8	7,950.4	10.25	21.7	6.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	328.2	1,151.0	7,197.5	9.93	21.9	6.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	301.1	1,128.4	6,660.6	9.66	22.1	5.9	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	388.3	1,081.9	7,248.0	9.70	18.7	6.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	356.3	1,067.6	6,792.7	9.48	19.1	6.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	327.2	1,049.9	6,307.1	9.27	19.3	6.0	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	297.4	1,029.8	5,797.8	9.02	19.5	5.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	273.7	1,014.3	5,476.3	8.78	20.0	5.4	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	244.2	988.8	4,935.9	8.46	20.2	5.0	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	219.7	963.9	4,477.6	8.16	20.4	4.6	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	295.0	911.9	4,931.1	8.22	16.7	5.4	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	245.1	877.4	4,265.7	7.74	17.4	4.9	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	208.9	845.6	3,682.8	7.35	17.6	4.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	189.1	843.9	3,455.2	7.21	18.3	4.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	176.0	829.4	3,229.9	7.03	18.4	3.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	159.7	809.8	2,948.0	6.78	18.5	3.6	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	250.2	759.0	3,584.1	7.02	14.3	4.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	263.3	793.5	3,876.4	7.27	14.7	4.9	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	242.1	777.8	3,589.7	7.08	14.8	4.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	220.9	761.3	3,301.7	6.88	14.9	4.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	192.8	743.0	2,977.2	6.60	15.4	4.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	174.8	726.3	2,716.9	6.39	15.5	3.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	158.3	708.2	2,474.2	6.16	15.6	3.5	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	144.5	692.5	2,269.7	5.96	15.7	3.3	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	136.1	691.5	2,202.6	5.89	16.2	3.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	124.4	674.5	2,021.1	5.69	16.2	3.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	112.8	657.4	1,840.9	5.48	16.3	2.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	203.6	683.1	2,772.3	6.31	13.6	4.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	182.2	661.7	2,469.6	6.03	13.6	3.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	159.1	644.2	2,226.1	5.77	14.0	3.5	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	144.4	627.6	2,029.0	5.57	14.1	3.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	129.8	609.9	1,832.2	5.36	14.1	3.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	117.2	593.1	1,662.5	5.15	14.2	2.8	12.00	15.86	8.46	0.645	6.45



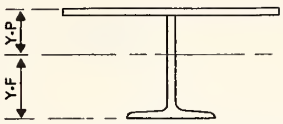
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
16 x 7 x 50 I-T	36.22	102.5	585.1	1,514.4	4.97	14.8	2.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	92.0	567.0	1,365.4	4.76	14.8	2.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	81.8	548.3	1,218.7	4.54	14.9	2.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	72.5	523.5	1,080.3	4.30	14.9	2.1	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	166.4	601.4	2,101.3	5.57	12.6	3.5	17.07	15.00	10.50	0.850	8.46
54 T	53.99	152.1	587.8	1,937.4	5.40	12.7	3.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	124.1	543.5	1,544.6	4.92	12.4	2.8	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	111.9	526.6	1,386.6	4.71	12.4	2.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	96.3	506.7	1,219.6	4.46	12.7	2.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	86.9	490.6	1,101.9	4.27	12.7	2.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	77.6	473.1	987.1	4.08	12.7	2.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	69.4	467.2	921.2	3.97	13.3	2.0	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	61.8	448.1	821.4	3.77	13.3	1.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	53.8	423.9	715.8	3.54	13.3	1.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	114.5	459.7	1,216.8	4.35	10.6	2.6	13.81	12.15	9.06	0.872	6.26
42 T	41.99	102.0	445.4	1,092.3	4.17	10.7	2.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	91.3	431.3	985.0	3.99	10.8	2.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	80.6	427.8	902.3	3.86	11.2	2.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	72.3	412.3	811.0	3.69	11.2	2.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	64.2	396.3	722.2	3.51	11.2	1.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	58.2	389.6	676.8	3.42	11.6	1.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	49.9	367.1	580.5	3.19	11.6	1.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	43.4	345.4	503.2	2.99	11.6	1.5	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.7	317.1	419.5	2.75	12.1	1.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.7	292.8	358.6	2.55	12.1	1.2	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	25.2	265.6	301.6	2.35	12.0	1.1	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.4	243.1	255.8	2.18	12.0	1.1	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	79.3	371.9	767.6	3.54	9.7	2.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	73.9	363.8	718.0	3.44	9.7	2.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	66.8	351.7	652.4	3.31	9.8	1.9	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	61.6	334.2	585.3	3.14	9.5	1.8	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	53.0	313.5	501.3	2.94	9.5	1.6	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	44.2	288.8	416.6	2.70	9.4	1.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	39.9	287.8	397.5	2.65	10.0	1.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	34.2	267.6	340.0	2.47	9.9	1.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	28.3	240.9	279.2	2.25	9.9	1.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.8	235.2	264.6	2.20	10.2	1.1	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.6	217.1	230.4	2.06	10.2	1.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.7	198.8	199.3	1.92	10.1	1.0	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	15.2	169.5	153.0	1.70	10.1	0.9	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	57.7	294.5	494.0	2.88	8.6	1.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	52.8	284.9	453.4	2.78	8.6	1.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	47.9	274.5	412.8	2.67	8.6	1.5	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	68.7	278.3	511.8	2.87	7.4	1.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	62.6	269.3	467.8	2.77	7.5	1.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	56.6	259.5	423.7	2.66	7.5	1.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	51.3	250.0	385.4	2.55	7.5	1.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	44.0	241.7	344.5	2.44	7.8	1.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	39.5	230.7	310.1	2.33	7.8	1.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	35.4	219.9	278.0	2.22	7.9	1.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.6	207.1	248.1	2.10	7.9	1.2	5.40	7.93	6.99	0.428	2.31



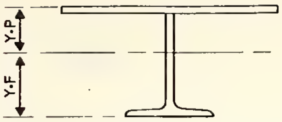
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 6 1/2 x 28 1-T	18.42	31.6	210.8	252.4	2.12	8.0	1.2	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	27.0	193.7	214.4	1.97	7.9	1.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	22.8	181.0	187.4	1.85	8.2	1.0	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	19.2	162.1	156.3	1.70	8.2	1.0	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	16.9	151.3	140.2	1.61	8.3	0.9	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	14.4	135.5	118.8	1.49	8.2	0.9	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	11.3	115.2	92.8	1.33	8.2	0.8	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	30.4	183.1	213.4	1.95	7.0	1.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	27.2	173.1	190.9	1.85	7.0	1.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.6	160.0	165.7	1.74	7.0	1.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	12.2	108.5	89.4	1.30	7.3	0.8	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	26.2	150.1	161.5	1.70	6.2	1.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	22.7	138.5	139.5	1.59	6.2	1.0	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	19.8	127.9	121.7	1.49	6.2	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	14.7	110.2	95.3	1.33	6.5	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.0	110.5	96.0	1.34	6.4	0.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.8	98.7	81.4	1.23	6.4	0.8	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	10.8	87.4	68.7	1.14	6.3	0.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.7	86.7	67.8	1.13	6.3	0.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	9.2	77.6	58.1	1.05	6.3	0.7	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	7.8	67.7	48.7	0.96	6.2	0.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.6	67.6	48.4	0.96	6.4	0.7	1.72	6.00	3.06	0.175	1.05



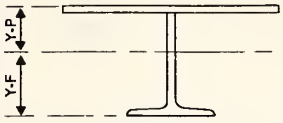
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,262.1	2,244.0	30,671.4	15.63	24.3	13.7	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,181.2	2,205.2	29,037.2	15.48	24.6	13.2	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,095.4	2,161.2	27,254.0	15.24	24.9	12.6	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,031.3	2,129.7	25,923.6	15.08	25.1	12.2	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	969.0	2,098.3	24,613.4	14.89	25.4	11.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	804.7	2,050.4	21,803.5	14.35	27.1	10.6	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	755.5	2,021.7	20,662.9	14.15	27.3	10.2	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	706.4	1,992.7	19,509.4	13.94	27.6	9.8	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	663.6	1,963.3	18,474.5	13.70	27.8	9.4	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	620.5	1,933.2	17,421.8	13.45	28.1	9.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	941.0	1,964.9	22,110.5	14.00	23.5	11.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	863.2	1,924.6	20,552.8	13.75	23.8	10.7	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	784.0	1,887.7	18,972.1	13.46	24.2	10.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	594.6	1,815.4	15,565.2	12.73	26.2	8.6	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	553.8	1,782.5	14,598.3	12.47	26.4	8.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	502.9	1,743.5	13,408.1	12.10	26.7	7.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	759.9	1,741.0	16,732.3	12.56	22.0	9.6	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	687.6	1,702.1	15,363.7	12.27	22.3	9.0	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	622.3	1,665.2	14,101.8	11.98	22.7	8.5	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	470.5	1,596.5	11,466.3	11.18	24.4	7.2	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	440.9	1,573.4	10,817.7	10.96	24.5	6.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	410.6	1,545.8	10,137.7	10.71	24.7	6.6	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	378.6	1,512.6	9,408.9	10.41	24.8	6.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	478.8	1,456.0	10,135.5	10.47	21.2	7.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	372.0	1,401.6	8,387.9	9.79	22.5	6.0	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	332.4	1,367.7	7,570.0	9.44	22.8	5.5	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	304.8	1,339.8	6,990.1	9.16	22.9	5.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	393.3	1,288.9	7,680.6	9.29	19.5	6.0	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	360.9	1,270.2	7,180.5	9.06	19.9	5.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	331.1	1,248.4	6,650.1	8.83	20.1	5.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	300.8	1,223.4	6,096.4	8.56	20.3	5.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	277.2	1,202.0	5,750.1	8.32	20.7	4.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	247.1	1,170.0	5,167.3	7.99	20.9	4.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	222.2	1,138.4	4,676.1	7.68	21.0	4.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	298.5	1,083.0	5,206.7	7.83	17.4	4.8	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	248.3	1,037.4	4,485.8	7.35	18.1	4.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	211.4	997.1	3,856.6	6.94	18.2	3.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	191.3	992.9	3,607.3	6.78	18.9	3.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	178.0	974.1	3,366.5	6.60	18.9	3.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	161.4	948.6	3,066.2	6.35	19.0	3.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	253.6	899.4	3,791.8	6.70	15.0	4.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	266.7	940.1	4,099.6	6.93	15.4	4.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	245.1	920.3	3,787.2	6.74	15.5	4.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	223.5	899.3	3,474.5	6.52	15.5	3.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	195.2	874.3	3,123.2	6.24	16.0	3.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	176.8	852.5	2,842.8	6.02	16.1	3.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	160.1	829.1	2,582.9	5.79	16.1	3.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	146.1	808.4	2,364.3	5.59	16.2	2.9	13.29	17.86	8.71	0.686	7.20

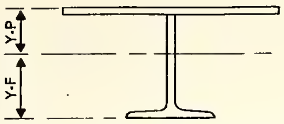


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 7 1/2 x 60 1-T	43.76	137.7	805.7	2,291.6	5.51	16.6	2.8	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	125.8	783.5	2,099.1	5.31	16.7	2.7	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	114.0	760.7	1,908.3	5.10	16.7	2.5	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	206.2	806.1	2,922.8	5.98	14.2	3.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	184.4	778.0	2,595.3	5.70	14.1	3.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	161.1	754.1	2,332.7	5.45	14.5	3.1	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	146.2	732.6	2,121.3	5.24	14.5	2.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	131.3	709.4	1,911.0	5.02	14.6	2.7	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	118.6	687.2	1,730.3	4.82	14.6	2.5	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	103.7	674.3	1,571.4	4.63	15.2	2.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	93.1	650.4	1,414.1	4.43	15.2	2.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	82.7	625.3	1,259.6	4.21	15.2	2.0	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	73.3	593.5	1,115.2	3.98	15.2	1.9	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	168.5	705.9	2,210.7	5.27	13.1	3.1	17.07	15.00	10.50	0.850	8.46
54 T	53.99	154.0	688.0	2,033.7	5.09	13.2	3.0	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	125.6	631.3	1,614.6	4.62	12.9	2.6	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	113.2	608.9	1,445.9	4.41	12.8	2.4	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	97.5	582.2	1,268.4	4.16	13.0	2.2	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	87.9	560.9	1,143.9	3.98	13.0	2.0	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	78.5	537.8	1,022.9	3.79	13.0	1.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	70.2	528.4	952.8	3.68	13.6	1.8	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	62.5	503.5	848.4	3.49	13.6	1.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	54.5	472.6	738.4	3.27	13.5	1.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	116.0	533.0	1,277.0	4.09	11.0	2.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	103.3	513.9	1,143.3	3.91	11.1	2.2	12.35	12.04	9.01	0.772	5.65
38 T	38.01	92.5	495.1	1,028.7	3.74	11.1	2.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	81.6	487.5	939.0	3.60	11.5	1.9	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	73.2	467.2	842.5	3.43	11.5	1.8	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	65.1	446.0	748.9	3.26	11.5	1.7	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	59.0	436.4	700.9	3.17	11.9	1.6	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	50.6	407.3	600.1	2.95	11.9	1.5	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	44.0	379.9	519.7	2.76	11.8	1.4	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	35.2	344.7	432.9	2.53	12.3	1.3	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	30.2	315.3	370.0	2.35	12.2	1.2	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	25.6	283.3	311.3	2.17	12.2	1.1	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	21.8	256.6	264.1	2.00	12.1	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	80.5	424.4	802.8	3.31	10.0	1.9	10.73	10.62	8.29	0.740	4.83
34 T	34.03	74.9	413.6	749.8	3.22	10.0	1.8	10.01	10.57	8.27	0.685	4.54
31 T	31.01	67.8	397.7	680.2	3.08	10.0	1.7	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	62.6	375.8	609.8	2.93	9.7	1.6	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	53.8	349.5	521.4	2.73	9.7	1.5	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	44.9	318.4	432.8	2.51	9.6	1.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	40.6	315.5	412.2	2.46	10.2	1.3	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	34.8	290.4	352.3	2.28	10.1	1.2	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	28.8	258.5	289.3	2.08	10.0	1.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	26.4	251.3	274.1	2.03	10.4	1.1	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	23.1	230.1	238.8	1.90	10.3	1.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	20.2	209.1	206.8	1.77	10.3	1.0	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	58.6	330.7	516.4	2.69	8.8	1.6	8.82	9.12	7.56	0.695	3.79



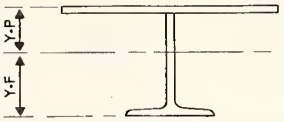
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	53.7	318.2	473.3	2.59	8.8	1.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	48.7	304.7	430.5	2.48	8.8	1.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	70.0	316.2	539.3	2.70	7.7	1.7	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	63.8	304.3	492.0	2.60	7.7	1.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	57.6	291.5	444.9	2.49	7.7	1.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	52.3	279.2	404.1	2.39	7.7	1.4	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	44.9	267.4	360.3	2.27	8.0	1.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	40.3	253.5	324.0	2.16	8.0	1.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	36.1	239.8	290.2	2.06	8.0	1.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	32.3	224.4	259.0	1.95	8.0	1.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	32.3	228.2	263.2	1.97	8.2	1.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	27.6	207.6	223.7	1.83	8.1	1.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	23.3	192.2	195.5	1.71	8.4	1.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	19.7	170.5	163.3	1.57	8.3	1.0	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	17.4	158.3	146.7	1.49	8.4	0.9	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	31.1	198.3	223.7	1.81	7.2	1.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	27.9	186.1	200.1	1.72	7.2	1.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	24.3	170.6	173.7	1.61	7.2	1.0	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	26.9	161.6	170.2	1.58	6.3	1.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	23.4	147.8	147.1	1.48	6.3	1.0	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	20.4	135.5	128.4	1.39	6.3	0.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	15.3	115.3	100.9	1.24	6.6	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.6	115.7	101.7	1.24	6.5	0.9	3.24	6.16	4.03	0.424	1.60



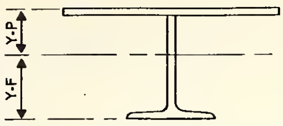
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 1-T	214.24	1,283.0	2,618.9	32,804.9	15.38	25.6	12.5	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,200.0	2,576.7	31,007.9	15.19	25.8	12.0	58.73	36.50	16.59	1.570	32.30
260 1-T	186.30	1,112.3	2,527.4	29,052.6	14.93	26.1	11.5	54.79	36.24	16.55	1.440	30.62
245 1-T	175.31	1,046.6	2,492.4	27,592.3	14.73	26.4	11.1	51.56	36.06	16.51	1.350	28.92
230 1-T	165.10	983.0	2,457.0	26,156.3	14.51	26.6	10.6	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 1-T	147.66	816.6	2,397.7	23,059.4	13.92	28.2	9.6	43.43	36.48	12.12	1.260	28.08
182 1-T	138.34	766.3	2,365.3	21,817.5	13.70	28.5	9.2	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	716.0	2,332.4	20,563.4	13.46	28.7	8.8	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	672.5	2,298.3	19,443.8	13.21	28.9	8.5	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	628.5	2,263.0	18,306.6	12.94	29.1	8.1	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	954.9	2,299.2	23,529.9	13.67	24.6	10.2	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	875.3	2,253.5	21,823.3	13.39	24.9	9.7	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	794.4	2,210.8	20,089.4	13.06	25.3	9.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	602.2	2,124.5	16,363.6	12.24	27.2	7.7	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	560.6	2,086.4	15,322.7	11.97	27.3	7.3	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	509.0	2,039.1	14,042.5	11.58	27.6	6.9	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 1-T	148.40	770.3	2,038.5	17,753.3	12.20	23.0	8.7	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	696.5	1,993.8	16,257.4	11.89	23.3	8.2	39.48	30.12	15.04	1.185	21.38
172 1-T	121.81	629.9	1,950.8	14,882.2	11.56	23.6	7.6	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	476.3	1,865.2	12,017.3	10.70	25.2	6.4	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	446.1	1,837.5	11,319.9	10.48	25.4	6.2	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	415.3	1,804.1	10,592.0	10.21	25.5	5.9	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	383.0	1,763.7	9,815.1	9.91	25.6	5.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	484.2	1,702.9	10,652.5	10.04	22.0	6.3	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	376.3	1,633.5	8,763.1	9.33	23.3	5.4	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	335.9	1,591.7	7,887.7	8.97	23.5	5.0	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	308.0	1,557.2	7,270.1	8.69	23.6	4.7	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	397.5	1,504.5	8,053.3	8.88	20.3	5.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	364.8	1,480.3	7,513.7	8.65	20.6	5.1	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	334.5	1,453.2	6,943.6	8.40	20.8	4.8	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	303.7	1,421.9	6,350.8	8.12	20.9	4.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	280.1	1,393.9	5,983.5	7.89	21.4	4.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	249.6	1,353.7	5,364.1	7.56	21.5	4.0	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	224.4	1,313.9	4,844.5	7.24	21.6	3.7	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	301.6	1,258.4	5,443.4	7.45	18.0	4.3	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	251.1	1,199.7	4,674.7	6.97	18.6	3.9	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	213.6	1,148.8	4,005.2	6.56	18.7	3.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	193.2	1,140.8	3,737.1	6.39	19.3	3.3	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	179.8	1,116.9	3,483.0	6.21	19.4	3.1	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	163.0	1,084.2	3,167.0	5.96	19.4	2.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	256.5	1,042.1	3,971.3	6.38	15.5	3.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	269.7	1,089.4	4,292.5	6.61	15.9	3.9	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	247.7	1,064.5	3,957.5	6.40	16.0	3.7	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	225.8	1,037.8	3,623.2	6.18	16.0	3.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	197.4	1,004.8	3,248.8	5.90	16.5	3.2	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	178.7	977.0	2,951.0	5.68	16.5	3.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	161.7	947.0	2,676.3	5.45	16.5	2.8	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	147.5	920.3	2,445.7	5.25	16.6	2.7	13.29	17.86	8.71	0.686	7.20

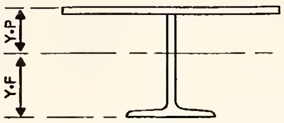


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 1-T	43.76	139.1	915.4	2,368.3	5.17	17.0	2.6	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	127.0	887.0	2,166.4	4.98	17.1	2.4	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	115.1	857.6	1,966.6	4.77	17.1	2.3	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	208.5	929.0	3,052.7	5.68	14.6	3.3	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	186.4	892.9	2,703.8	5.39	14.5	3.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	163.0	861.6	2,424.9	5.14	14.9	2.8	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	147.8	834.2	2,201.2	4.94	14.9	2.6	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	132.7	804.4	1,979.2	4.72	14.9	2.5	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	119.8	776.0	1,789.2	4.52	14.9	2.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	104.8	757.0	1,621.2	4.34	15.5	2.1	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	94.1	726.5	1,456.9	4.14	15.5	2.0	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	83.6	694.2	1,295.9	3.93	15.5	1.9	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	74.1	654.9	1,146.3	3.71	15.5	1.8	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	170.5	808.5	2,305.5	4.99	13.5	2.9	17.07	15.00	10.50	0.850	8.46
54 T	53.99	155.8	785.5	2,117.4	4.81	13.6	2.7	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	127.0	714.6	1,675.7	4.34	13.2	2.3	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	114.4	685.9	1,497.8	4.14	13.1	2.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	98.6	651.4	1,311.4	3.90	13.3	2.0	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	88.9	624.4	1,181.2	3.72	13.3	1.9	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	79.4	595.1	1,054.9	3.54	13.3	1.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	71.1	581.8	981.4	3.43	13.8	1.7	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	63.3	550.8	873.0	3.25	13.8	1.6	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	55.2	513.1	759.3	3.04	13.8	1.5	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	117.5	602.3	1,330.2	3.86	11.3	2.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	104.6	577.6	1,188.5	3.68	11.4	2.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	93.7	553.4	1,067.6	3.51	11.4	1.9	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	82.7	541.0	972.0	3.37	11.8	1.8	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	74.2	515.5	871.1	3.21	11.7	1.7	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	65.9	488.8	773.4	3.04	11.7	1.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	59.8	476.0	723.1	2.95	12.1	1.5	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	51.3	440.2	618.5	2.75	12.1	1.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	44.6	407.2	535.4	2.57	12.0	1.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	35.8	365.7	446.0	2.35	12.5	1.2	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	30.8	331.8	381.4	2.18	12.4	1.1	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	26.1	295.8	321.3	2.01	12.3	1.1	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	22.3	265.6	272.9	1.86	12.2	1.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	81.6	471.6	834.5	3.11	10.2	1.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	76.0	457.9	778.8	3.02	10.2	1.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	68.8	437.8	705.8	2.89	10.3	1.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	63.5	411.7	632.6	2.74	10.0	1.5	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	54.6	379.6	540.4	2.55	9.9	1.4	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	45.7	342.4	448.3	2.34	9.8	1.3	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	41.3	337.4	426.5	2.29	10.3	1.3	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	35.5	307.9	364.5	2.13	10.3	1.2	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	29.5	271.4	299.7	1.94	10.2	1.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	26.9	262.9	283.9	1.89	10.5	1.1	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	23.7	239.3	247.7	1.77	10.5	1.0	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	20.7	216.3	214.9	1.65	10.4	1.0	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	59.7	361.8	537.4	2.52	9.0	1.5	8.82	9.12	7.56	0.695	3.79



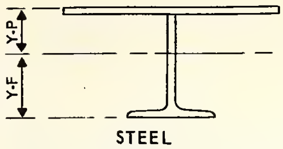
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	54.6	346.4	492.2	2.43	9.0	1.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	49.6	329.9	447.4	2.32	9.0	1.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	71.3	349.9	564.8	2.55	7.9	1.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	65.0	335.1	514.7	2.45	7.9	1.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	58.7	319.1	464.9	2.34	7.9	1.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	53.3	303.9	421.9	2.24	7.9	1.4	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	45.8	288.6	375.6	2.13	8.2	1.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	41.2	272.0	337.6	2.03	8.2	1.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	36.9	255.6	302.4	1.93	8.2	1.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	33.1	237.9	270.0	1.83	8.2	1.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	33.0	241.7	274.3	1.84	8.3	1.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	28.4	218.1	233.3	1.71	8.2	1.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	24.0	200.4	204.1	1.60	8.5	1.0	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	20.3	176.6	170.9	1.47	8.4	1.0	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	18.0	163.4	153.8	1.40	8.6	0.9	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	32.0	210.4	234.2	1.70	7.3	1.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	28.7	196.3	209.7	1.61	7.3	1.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	25.0	178.8	182.3	1.51	7.3	1.0	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	27.8	170.8	179.4	1.49	6.4	1.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	24.2	155.2	155.4	1.39	6.4	1.0	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	21.3	141.5	135.9	1.31	6.4	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	16.0	119.4	107.4	1.17	6.7	0.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	16.3	120.0	108.2	1.17	6.6	0.9	3.24	6.16	4.03	0.424	1.60

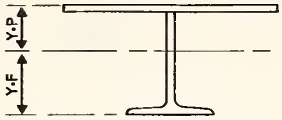


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,300.9	3,022.4	34,759.0	15.07	26.7	11.5	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,215.9	2,975.9	32,802.7	14.85	27.0	11.0	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,126.6	2,920.3	30,681.9	14.56	27.2	10.5	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,059.6	2,881.0	29,096.8	14.34	27.5	10.1	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	994.8	2,840.8	27,541.3	14.10	27.7	9.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	826.8	2,767.5	24,178.5	13.46	29.2	8.7	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	775.5	2,730.5	22,841.7	13.22	29.5	8.4	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	724.3	2,692.6	21,494.1	12.96	29.7	8.0	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	680.0	2,652.7	20,296.8	12.70	29.8	7.7	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	635.4	2,611.2	19,082.4	12.42	30.0	7.3	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	966.8	2,656.6	24,809.0	13.30	25.7	9.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	885.7	2,604.3	22,961.1	12.98	25.9	8.8	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	803.3	2,554.2	21,084.0	12.63	26.2	8.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	608.7	2,450.2	17,064.4	11.75	28.0	7.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	566.5	2,405.6	15,956.1	11.47	28.2	6.6	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	514.2	2,348.4	14,595.3	11.07	28.4	6.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	779.3	2,354.5	18,665.6	11.82	24.0	7.9	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	704.1	2,302.5	17,050.6	11.48	24.2	7.4	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	636.4	2,251.8	15,570.9	11.12	24.5	6.9	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	481.2	2,145.3	12,498.7	10.24	26.0	5.8	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	450.6	2,111.9	11,757.4	10.00	26.1	5.6	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	419.4	2,071.5	10,987.0	9.74	26.2	5.3	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	386.7	2,022.7	10,167.6	9.43	26.3	5.0	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	488.9	1,960.2	11,105.6	9.62	22.7	5.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	379.9	1,872.2	9,089.7	8.89	23.9	4.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	339.1	1,820.7	8,163.3	8.52	24.1	4.5	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	310.8	1,778.0	7,512.7	8.24	24.2	4.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	401.1	1,726.7	8,379.0	8.48	20.9	4.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	368.2	1,695.9	7,804.5	8.24	21.2	4.6	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	337.5	1,662.2	7,198.9	7.99	21.3	4.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	306.4	1,622.9	6,571.8	7.70	21.5	4.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	282.7	1,587.6	6,186.5	7.48	21.9	3.9	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	251.8	1,537.4	5,534.9	7.15	22.0	3.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	226.4	1,487.8	4,990.7	6.84	22.0	3.4	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	304.3	1,436.1	5,650.3	7.09	18.6	3.9	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	253.6	1,362.3	4,840.2	6.61	19.1	3.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	215.7	1,298.5	4,135.2	6.20	19.2	3.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	195.0	1,285.4	3,850.6	6.03	19.7	3.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	181.4	1,255.3	3,585.0	5.85	19.8	2.9	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	164.4	1,214.2	3,255.5	5.61	19.8	2.7	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	259.1	1,185.1	4,129.4	6.07	15.9	3.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	272.4	1,239.5	4,462.4	6.29	16.4	3.6	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	250.1	1,208.5	4,107.3	6.08	16.4	3.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	228.0	1,175.0	3,753.8	5.86	16.5	3.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	199.3	1,132.8	3,359.5	5.58	16.9	3.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	180.4	1,097.6	3,046.4	5.36	16.9	2.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	163.3	1,060.0	2,758.8	5.14	16.9	2.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	148.9	1,026.2	2,517.9	4.94	16.9	2.5	13.29	17.86	8.71	0.686	7.20



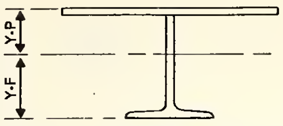
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	140.4	1,018.7	2,436.3	4.87	17.3	2.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	128.3	983.4	2,226.5	4.68	17.4	2.3	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	116.3	946.6	2,018.9	4.48	17.4	2.1	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	210.7	1,050.0	3,167.5	5.39	15.0	3.0	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	206.5	1,037.6	3,068.6	5.31	14.9	3.0	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	188.3	1,004.7	2,800.0	5.11	14.9	2.8	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	164.7	965.0	2,507.0	4.86	15.2	2.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	149.3	930.7	2,272.4	4.66	15.2	2.4	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	134.1	893.4	2,040.4	4.45	15.2	2.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	121.1	858.0	1,842.2	4.25	15.2	2.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	105.9	832.1	1,666.3	4.07	15.7	2.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	95.1	794.3	1,496.0	3.88	15.7	1.9	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	128.4	792.4	1,730.8	4.09	13.5	2.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	115.7	756.6	1,545.0	3.89	13.4	2.0	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	99.7	713.7	1,350.9	3.66	13.5	1.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	90.0	680.5	1,215.6	3.49	13.5	1.8	9.70	13.80	8.03	0.593	4.68
12 x 10 x 53 I-T	34.55	89.2	602.6	1,053.9	3.24	11.8	1.7	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	119.0	666.5	1,378.6	3.64	11.6	2.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	106.0	635.7	1,230.0	3.47	11.6	1.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	94.9	605.8	1,103.7	3.30	11.6	1.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	83.7	587.9	1,002.8	3.17	12.0	1.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	75.2	557.1	898.1	3.01	11.9	1.6	8.94	12.06	8.04	0.576	4.05
10 1/2 x 8 1/4 x 36.5 T	36.48	82.8	513.3	864.4	2.93	10.4	1.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	77.2	496.5	806.2	2.84	10.4	1.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	69.9	472.3	730.2	2.71	10.4	1.5	9.12	10.49	8.24	0.615	4.19
9 x 8 3/4 x 35 T	34.95	72.0	416.4	644.9	2.54	9.0	1.5	10.28	9.00	8.75	0.751	3.94
32 T	31.96	66.0	398.4	591.2	2.44	9.0	1.5	9.40	8.94	8.71	0.686	3.60
8 x 8 1/2 x 39 T	38.96	72.7	379.7	589.3	2.41	8.1	1.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	66.3	361.9	536.8	2.31	8.1	1.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	59.9	342.8	484.6	2.21	8.1	1.4	9.40	8.00	8.50	0.715	3.54



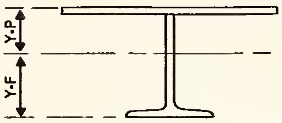
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,329.7	3,898.4	38,143.5	14.34	28.7	9.8	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,241.7	3,840.2	35,890.6	14.07	28.9	9.3	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,149.8	3,768.1	33,467.5	13.74	29.1	8.9	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,080.6	3,717.2	31,655.2	13.49	29.3	8.5	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,013.9	3,664.1	29,884.5	13.22	29.5	8.2	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	843.3	3,554.9	26,057.0	12.53	30.9	7.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	790.4	3,505.1	24,552.7	12.27	31.1	7.0	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	737.6	3,453.3	23,041.3	11.98	31.2	6.7	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	692.3	3,398.2	21,710.0	11.71	31.4	6.4	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	646.6	3,340.3	20,363.4	11.41	31.5	6.1	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	986.1	3,422.4	26,983.9	12.50	27.4	7.9	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	902.6	3,352.7	24,882.8	12.14	27.6	7.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	817.9	3,282.8	22,752.5	11.75	27.8	6.9	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	619.3	3,129.7	18,223.8	10.80	29.4	5.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	576.1	3,068.2	17,000.2	10.51	29.5	5.5	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	522.8	2,985.6	15,504.3	10.11	29.7	5.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	793.9	3,023.9	20,204.1	11.03	25.4	6.7	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	716.7	2,952.3	18,379.1	10.65	25.6	6.2	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	647.3	2,881.0	16,717.3	10.28	25.8	5.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	489.4	2,719.5	13,293.7	9.36	27.2	4.9	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	458.1	2,671.1	12,478.6	9.12	27.2	4.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	426.3	2,613.0	11,637.1	8.85	27.3	4.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	393.0	2,543.0	10,747.2	8.55	27.3	4.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	496.9	2,486.9	11,856.8	8.82	23.9	4.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	386.2	2,350.5	9,629.5	8.08	24.9	4.1	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	344.5	2,273.5	8,618.1	7.71	25.0	3.8	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	315.6	2,210.4	7,913.1	7.43	25.1	3.6	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	407.6	2,173.2	8,919.5	7.74	21.9	4.1	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	374.1	2,125.5	8,287.1	7.50	22.2	3.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	342.8	2,074.3	7,622.3	7.24	22.2	3.7	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	311.0	2,014.7	6,938.1	6.96	22.3	3.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	287.3	1,962.5	6,524.3	6.75	22.7	3.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	255.9	1,887.2	5,819.8	6.43	22.7	3.1	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	230.0	1,813.8	5,235.5	6.13	22.8	2.9	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	309.3	1,782.1	5,996.3	6.43	19.4	3.4	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	258.1	1,672.9	5,118.6	5.98	19.8	3.1	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	219.4	1,577.6	4,355.0	5.58	19.8	2.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	198.4	1,550.6	4,043.2	5.41	20.4	2.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	184.5	1,505.9	3,758.8	5.23	20.4	2.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	167.2	1,445.5	3,407.3	5.00	20.4	2.4	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	277.4	1,528.7	4,749.7	5.72	17.1	3.1	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	254.6	1,482.4	4,361.0	5.51	17.1	2.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	232.0	1,432.4	3,975.8	5.30	17.1	2.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	203.1	1,368.6	3,548.9	5.03	17.5	2.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	183.8	1,315.9	3,210.6	4.81	17.5	2.4	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	166.3	1,260.8	2,901.8	4.60	17.4	2.3	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	151.7	1,211.1	2,643.9	4.41	17.4	2.2	13.29	17.86	8.71	0.686	7.20



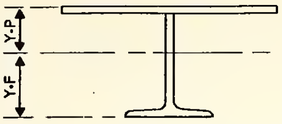
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	143.1	1,197.4	2,555.7	4.35	17.9	2.1	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	130.8	1,146.9	2,332.6	4.17	17.8	2.0	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	118.6	1,094.2	2,112.5	3.98	17.8	1.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	214.8	1,275.1	3,364.3	4.87	15.7	2.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	191.9	1,208.6	2,966.0	4.61	15.5	2.5	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	168.1	1,149.9	2,649.9	4.37	15.8	2.3	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	152.4	1,100.1	2,397.6	4.18	15.7	2.2	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	136.9	1,046.3	2,148.8	3.98	15.7	2.1	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	123.7	995.7	1,937.3	3.80	15.7	1.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	108.2	954.4	1,748.4	3.62	16.2	1.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	97.2	901.9	1,568.2	3.45	16.1	1.7	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	131.3	924.8	1,829.6	3.67	13.9	2.0	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	118.3	874.0	1,630.7	3.48	13.8	1.9	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	102.1	814.2	1,424.0	3.27	13.9	1.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	92.2	768.7	1,280.4	3.11	13.9	1.7	9.70	13.80	8.03	0.593	4.68



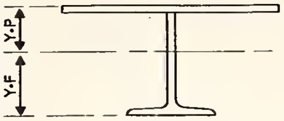
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,352.3	4,846.8	40,938.9	13.55	30.3	8.4	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,262.0	4,771.8	38,423.6	13.25	30.4	8.1	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,168.0	4,677.4	35,738.9	12.90	30.6	7.6	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,097.2	4,609.9	33,730.7	12.63	30.7	7.3	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,029.1	4,538.9	31,776.6	12.34	30.9	7.0	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	856.4	4,381.1	27,564.7	11.64	32.2	6.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	802.2	4,313.1	25,920.4	11.36	32.3	6.0	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	748.3	4,241.3	24,273.4	11.07	32.4	5.7	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	702.1	4,165.7	22,832.6	10.80	32.5	5.5	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	655.6	4,085.6	21,378.9	10.50	32.6	5.2	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,001.4	4,234.7	28,750.8	11.69	28.7	6.8	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	916.1	4,140.7	26,434.7	11.32	28.9	6.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	829.6	4,043.2	24,092.6	10.92	29.0	6.0	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	628.0	3,820.6	19,146.1	9.94	30.5	5.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	584.0	3,736.3	17,829.1	9.65	30.5	4.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	529.9	3,620.9	16,225.8	9.26	30.6	4.5	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	805.8	3,721.0	21,447.6	10.26	26.6	5.8	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	727.0	3,621.9	19,447.2	9.87	26.8	5.4	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	656.2	3,522.3	17,635.4	9.49	26.9	5.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	496.4	3,287.2	13,929.2	8.58	28.1	4.2	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	464.5	3,218.9	13,054.9	8.34	28.1	4.1	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	432.2	3,138.0	12,157.1	8.09	28.1	3.9	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	398.5	3,041.6	11,211.8	7.80	28.1	3.7	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	503.7	3,006.6	12,460.4	8.10	24.7	4.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	391.7	2,807.0	10,065.0	7.38	25.7	3.6	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	349.3	2,697.3	8,986.4	7.02	25.7	3.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	320.0	2,608.8	8,238.6	6.75	25.7	3.2	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	413.3	2,601.2	9,357.6	7.08	22.6	3.6	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	379.5	2,532.3	8,679.2	6.85	22.9	3.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	347.6	2,458.4	7,967.3	6.60	22.9	3.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	315.4	2,373.0	7,237.9	6.33	22.9	3.1	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	291.6	2,302.3	6,802.6	6.14	23.3	3.0	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	259.7	2,196.5	6,056.4	5.83	23.3	2.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	233.5	2,095.5	5,440.7	5.55	23.3	2.6	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	314.0	2,098.8	6,282.5	5.87	20.0	3.0	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	262.4	1,949.5	5,352.0	5.44	20.4	2.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	223.1	1,816.9	4,542.0	5.06	20.4	2.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	201.7	1,772.5	4,208.6	4.89	20.9	2.4	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	187.6	1,711.7	3,909.4	4.73	20.8	2.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	170.2	1,630.4	3,540.6	4.52	20.8	2.2	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	282.2	1,789.4	4,991.6	5.23	17.7	2.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	259.0	1,724.8	4,575.9	5.03	17.7	2.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	236.1	1,655.5	4,165.4	4.82	17.6	2.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	206.8	1,567.8	3,712.8	4.57	18.0	2.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	187.2	1,495.6	3,354.4	4.37	17.9	2.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	169.5	1,421.6	3,028.8	4.17	17.9	2.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	154.7	1,355.3	2,757.5	3.99	17.8	2.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	146.0	1,335.0	2,664.0	3.93	18.2	2.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	133.5	1,269.5	2,430.5	3.76	18.2	1.9	11.84	18.12	7.53	0.630	7.06

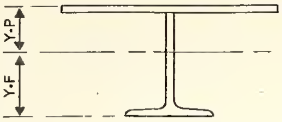


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

91.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,370.9	5,839.7	43,267.9	12.77	31.6	7.4	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,278.7	5,741.7	40,525.2	12.46	31.7	7.1	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,183.1	5,618.3	37,616.9	12.09	31.8	6.7	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,111.1	5,528.6	35,442.0	11.81	31.9	6.4	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,041.8	5,433.9	33,333.1	11.52	32.0	6.1	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	867.4	5,213.9	28,803.4	10.82	33.2	5.5	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	812.3	5,121.6	27,042.6	10.55	33.3	5.3	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	757.5	5,023.5	25,283.4	10.25	33.4	5.0	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	710.7	4,921.8	23,752.8	9.98	33.4	4.8	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	663.5	4,813.6	22,211.6	9.70	33.5	4.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,014.4	5,064.3	30,212.3	10.93	29.8	6.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	927.6	4,938.3	27,714.8	10.56	29.9	5.6	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	839.7	4,804.6	25,196.2	10.15	30.0	5.2	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	635.6	4,491.4	19,905.9	9.18	31.3	4.4	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	591.0	4,378.4	18,512.6	8.90	31.3	4.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	536.3	4,223.4	16,822.7	8.52	31.4	4.0	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	816.1	4,417.3	22,477.8	9.56	27.5	5.1	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	736.0	4,282.6	20,331.0	9.17	27.6	4.7	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	664.2	4,146.7	18,395.3	8.79	27.7	4.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	502.7	3,820.6	14,459.3	7.90	28.8	3.8	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	470.4	3,728.0	13,537.1	7.67	28.8	3.6	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	437.7	3,620.3	12,593.8	7.43	28.8	3.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	403.6	3,493.7	11,604.0	7.15	28.7	3.3	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	510.1	3,494.3	12,966.4	7.47	25.4	3.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	396.9	3,219.2	10,435.0	6.77	26.3	3.2	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	353.9	3,071.5	9,301.9	6.43	26.3	3.0	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	324.4	2,954.3	8,519.7	6.18	26.3	2.9	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	418.8	2,989.7	9,730.6	6.52	23.2	3.3	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	384.6	2,896.5	9,015.2	6.30	23.4	3.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	352.4	2,796.2	8,264.9	6.06	23.5	3.0	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	319.7	2,681.6	7,499.0	5.80	23.5	2.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	295.9	2,591.9	7,046.5	5.62	23.8	2.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	263.6	2,453.2	6,266.6	5.33	23.8	2.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	237.1	2,323.2	5,625.5	5.07	23.7	2.4	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	318.8	2,372.3	6,533.7	5.39	20.5	2.8	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	266.8	2,181.1	5,560.7	4.99	20.8	2.5	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	227.0	2,009.5	4,712.8	4.63	20.8	2.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	205.3	1,946.3	4,361.6	4.47	21.2	2.2	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	191.0	1,869.7	4,050.4	4.32	21.2	2.2	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	173.4	1,768.3	3,667.4	4.12	21.2	2.1	13.54	20.98	8.24	0.615	8.39

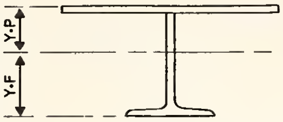


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

102.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,387.1	6,848.2	45,237.8	12.02	32.6	6.6	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,293.3	6,720.6	42,299.3	11.71	32.7	6.3	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,196.4	6,561.0	39,200.5	11.34	32.8	6.0	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,123.3	6,443.2	36,883.8	11.06	32.8	5.7	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,053.1	6,318.8	34,644.0	10.77	32.9	5.5	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	877.3	6,023.3	29,849.7	10.09	34.0	5.0	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	821.4	5,900.8	27,991.3	9.81	34.1	4.7	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	765.8	5,770.2	26,138.5	9.53	34.1	4.5	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	718.4	5,637.6	24,533.5	9.26	34.1	4.4	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	670.8	5,496.2	22,920.0	8.99	34.2	4.2	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,025.9	5,882.9	31,449.4	10.23	30.7	5.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	938.0	5,717.3	28,798.7	9.86	30.7	5.0	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	848.9	5,539.3	26,132.1	9.46	30.8	4.7	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	642.7	5,115.9	20,555.7	8.51	32.0	4.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	597.7	4,969.6	19,099.2	8.24	32.0	3.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	542.4	4,769.9	17,338.1	7.88	32.0	3.6	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	825.6	5,087.4	23,356.4	8.92	28.3	4.6	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	744.5	4,909.5	21,086.6	8.53	28.3	4.3	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	671.8	4,730.5	19,047.3	8.16	28.4	4.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	508.7	4,299.6	14,921.2	7.31	29.3	3.5	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	476.1	4,179.9	13,959.3	7.09	29.3	3.3	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	443.1	4,042.9	12,978.5	6.86	29.3	3.2	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	408.7	3,884.0	11,952.1	6.60	29.2	3.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	633.0	4,256.2	16,422.2	7.57	25.9	3.9	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	570.3	4,090.3	14,804.5	7.23	26.0	3.6	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	516.4	3,931.8	13,409.4	6.92	26.0	3.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	402.2	3,573.9	10,765.6	6.26	26.8	3.0	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	358.7	3,385.6	9,587.3	5.93	26.7	2.8	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	328.8	3,238.8	8,776.6	5.69	26.7	2.7	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	528.3	3,673.0	12,572.2	6.67	23.8	3.4	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	476.4	3,509.6	11,317.0	6.37	23.8	3.2	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	424.4	3,326.4	10,064.4	6.03	23.7	3.0	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	390.0	3,207.2	9,318.3	5.82	23.9	2.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	357.3	3,078.9	8,536.0	5.59	23.9	2.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	324.3	2,934.2	7,739.6	5.35	23.9	2.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	300.5	2,826.4	7,273.1	5.19	24.2	2.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	267.8	2,655.1	6,465.1	4.91	24.1	2.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	241.0	2,497.6	5,802.7	4.66	24.1	2.3	16.71	23.90	8.98	0.682	10.52



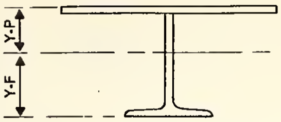
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

40t

112.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x16 1/2 x300 I-T	214.24	1,401.6	7,844.7	46,935.6	11.33	33.5	6.0	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,306.6	7,680.7	43,828.1	11.01	33.5	5.7	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,208.6	7,478.0	40,566.2	10.66	33.6	5.4	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,134.6	7,326.4	38,128.4	10.38	33.6	5.2	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,063.6	7,167.0	35,777.2	10.10	33.6	5.0	48.56	35.88	16.47	1.260	27.44
36 x12 x194 I-T	147.66	886.6	6,784.3	30,759.9	9.43	34.7	4.5	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	830.0	6,626.5	28,818.8	9.16	34.7	4.3	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	773.8	6,458.4	26,886.9	8.89	34.7	4.2	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	725.9	6,291.0	25,219.4	8.63	34.7	4.0	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	677.8	6,112.7	23,545.0	8.37	34.7	3.9	33.79	35.84	11.97	0.940	22.40
33 x15 3/4 x240 I-T	170.91	1,036.8	6,665.9	32,523.8	9.60	31.4	4.9	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	947.8	6,453.9	29,742.7	9.24	31.4	4.6	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	857.7	6,224.5	26,950.6	8.84	31.4	4.3	42.21	33.00	15.57	1.150	23.59
33 x11 1/2 x152 I-T	114.31	649.7	5,676.0	21,132.7	7.93	32.5	3.7	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	604.2	5,493.3	19,622.9	7.67	32.5	3.6	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	548.5	5,246.2	17,802.1	7.33	32.5	3.4	29.15	33.10	11.51	0.855	19.19
30 x15 x210 I-T	148.40	834.8	5,710.9	24,128.9	8.35	28.9	4.2	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	752.7	5,483.9	21,754.5	7.98	28.9	4.0	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	679.2	5,256.6	19,627.6	7.62	28.9	3.7	35.83	29.88	14.98	1.065	19.57
30 x10 1/2 x132 I-T	99.55	514.9	4,713.1	15,341.3	6.80	29.8	3.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	481.9	4,564.9	14,345.8	6.59	29.8	3.1	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	448.7	4,397.9	13,333.4	6.37	29.7	3.0	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	414.0	4,206.9	12,276.0	6.13	29.7	2.9	24.38	29.82	10.48	0.760	16.34
27 x14 x177 I-T	124.95	640.7	4,717.6	16,951.9	7.07	26.5	3.6	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	577.3	4,508.1	15,265.2	6.74	26.4	3.4	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	522.8	4,309.4	13,814.3	6.45	26.4	3.2	30.01	26.88	13.96	0.975	16.12
27 x10 x114 I-T	85.05	407.7	3,866.6	11,075.2	5.82	27.2	2.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	363.8	3,638.0	9,858.5	5.51	27.1	2.7	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	333.7	3,462.9	9,023.5	5.28	27.0	2.6	20.75	26.90	9.99	0.747	13.18
24 x14 x160 I-T	109.94	535.3	4,032.2	12,980.7	6.23	24.3	3.2	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	482.8	3,830.4	11,675.8	5.93	24.2	3.0	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	430.4	3,606.6	10,377.2	5.62	24.1	2.9	26.42	24.24	14.00	0.900	13.70
24 x12 x120 I-T	84.70	395.7	3,461.9	9,605.0	5.42	24.3	2.8	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	362.7	3,305.9	8,795.4	5.20	24.2	2.7	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	329.4	3,132.3	7,972.9	4.97	24.2	2.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	305.4	3,008.6	7,494.6	4.82	24.5	2.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	272.4	2,807.3	6,662.4	4.56	24.5	2.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	245.4	2,625.5	5,981.8	4.33	24.4	2.3	16.71	23.90	8.98	0.682	10.52



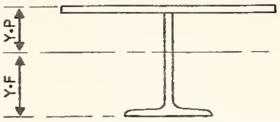
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

40t

122.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 1-T	214.24	1,415.2	8,804.8	48,429.1	10.70	34.2	5.5	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,319.1	8,598.2	45,175.1	10.39	34.2	5.3	58.73	36.50	16.59	1.570	32.30
260 1-T	186.30	1,220.2	8,346.4	41,772.6	10.04	34.2	5.0	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,145.4	8,156.2	39,230.3	9.76	34.3	4.8	51.56	36.06	16.51	1.350	28.92
230 1-T	165.10	1,073.7	7,957.0	36,783.4	9.49	34.3	4.6	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 1-T	147.66	895.6	7,478.5	31,575.7	8.85	35.3	4.2	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	838.4	7,281.8	29,563.6	8.59	35.3	4.1	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	781.7	7,072.8	27,563.8	8.32	35.3	3.9	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	733.4	6,868.3	25,842.8	8.08	35.2	3.8	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	684.9	6,651.2	24,116.5	7.83	35.2	3.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	1,047.2	7,393.9	33,482.1	9.03	32.0	4.5	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	957.4	7,130.2	30,588.6	8.68	31.9	4.3	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	866.5	6,844.3	27,688.7	8.30	32.0	4.0	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	656.8	6,161.8	21,663.7	7.42	33.0	3.5	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	610.9	5,941.5	20,108.2	7.17	32.9	3.4	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	554.8	5,646.8	18,236.3	6.85	32.9	3.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 1-T	148.40	843.9	6,273.9	24,829.3	7.84	29.4	4.0	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	761.0	5,993.9	22,364.8	7.48	29.4	3.7	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	686.9	5,715.7	20,162.4	7.14	29.4	3.5	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	521.3	5,057.8	15,738.5	6.36	30.2	3.1	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	488.1	4,881.5	14,714.1	6.16	30.1	3.0	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	454.6	4,685.7	13,674.3	5.95	30.1	2.9	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	419.7	4,464.3	12,590.2	5.72	30.0	2.8	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 1-T	124.95	648.7	5,118.1	17,444.4	6.63	26.9	3.4	36.75	27.30	14.09	1.190	19.79
160 1-T	112.61	584.6	4,863.9	15,698.1	6.32	26.9	3.2	33.12	27.08	14.02	1.075	17.81
145 1-T	102.05	529.6	4,624.5	14,198.8	6.03	26.8	3.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	413.6	4,099.9	11,377.4	5.44	27.5	2.8	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	369.4	3,834.0	10,127.3	5.15	27.4	2.6	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	339.0	3,633.3	9,271.2	4.93	27.3	2.6	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	542.7	4,334.6	13,369.1	5.84	24.6	3.1	32.33	24.72	14.09	1.135	16.21
145 1-T	99.74	489.8	4,095.1	12,021.2	5.56	24.5	2.9	29.34	24.48	14.04	1.020	14.88
130 1-T	89.83	436.9	3,832.6	10,682.5	5.26	24.5	2.8	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	401.9	3,664.1	9,887.7	5.07	24.6	2.7	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	368.7	3,482.6	9,054.1	4.86	24.6	2.6	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	335.1	3,283.0	8,208.9	4.64	24.5	2.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	311.0	3,145.8	7,720.4	4.50	24.8	2.5	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	277.7	2,918.8	6,866.8	4.26	24.7	2.4	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	250.5	2,716.9	6,170.1	4.05	24.6	2.3	16.71	23.90	8.98	0.682	10.52



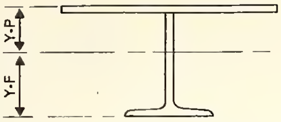
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

40t

132.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,428.4	9,708.5	49,771.4	10.12	34.8	5.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,331.4	9,454.2	46,389.2	9.82	34.8	4.9	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,231.6	9,148.8	42,864.2	9.48	34.8	4.7	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,156.1	8,916.2	40,230.8	9.21	34.8	4.5	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,083.9	8,674.1	37,700.6	8.95	34.8	4.3	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	904.6	8,094.8	32,328.2	8.33	35.7	4.0	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	847.0	7,857.2	30,254.3	8.08	35.7	3.9	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	789.7	7,605.9	28,195.5	7.83	35.7	3.7	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	741.1	7,363.8	26,428.0	7.59	35.7	3.6	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	692.2	7,107.7	24,656.4	7.35	35.6	3.5	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,057.8	8,053.8	34,359.7	8.53	32.5	4.3	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	967.1	7,735.1	31,368.2	8.18	32.4	4.1	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	875.5	7,390.2	28,374.4	7.81	32.4	3.8	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	664.2	6,570.9	22,169.0	6.97	33.4	3.4	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	618.0	6,313.8	20,573.5	6.73	33.3	3.3	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	561.5	5,973.7	18,657.1	6.43	33.2	3.1	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	853.3	6,769.0	25,483.5	7.39	29.9	3.8	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	769.7	6,434.7	22,940.1	7.05	29.8	3.6	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	695.0	6,105.3	20,671.7	6.72	29.7	3.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	528.3	5,336.9	16,127.4	5.97	30.5	3.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	494.8	5,134.4	15,077.5	5.79	30.5	2.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	461.0	4,912.2	14,013.7	5.59	30.4	2.9	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	425.9	4,663.7	12,906.1	5.37	30.3	2.8	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	657.1	5,456.6	17,917.6	6.25	27.3	3.3	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	592.5	5,158.7	16,118.9	5.95	27.2	3.1	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	537.0	4,880.5	14,576.9	5.68	27.1	3.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	420.2	4,281.1	11,682.9	5.11	27.8	2.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	375.6	3,982.2	10,403.1	4.84	27.7	2.6	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	345.0	3,759.7	9,528.2	4.64	27.6	2.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	550.7	4,583.0	13,751.1	5.50	25.0	3.0	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	497.4	4,308.3	12,365.1	5.23	24.9	2.9	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	444.1	4,010.7	10,990.9	4.95	24.7	2.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	408.9	3,821.2	10,176.1	4.77	24.9	2.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	375.4	3,617.3	9,321.2	4.58	24.8	2.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	341.5	3,395.6	8,455.6	4.37	24.8	2.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	317.3	3,247.7	7,958.0	4.24	25.1	2.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	283.8	2,999.8	7,085.2	4.01	25.0	2.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	256.4	2,782.1	6,373.9	3.81	24.9	2.3	16.71	23.90	8.98	0.682	10.52

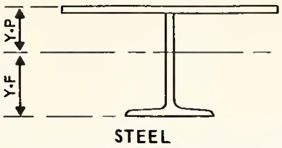


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

142.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,441.5	10,541.4	51,003.8	9.60	35.4	4.8	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,343.6	10,235.8	47,508.4	9.30	35.4	4.6	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,243.1	9,873.8	43,875.5	8.97	35.3	4.4	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,167.0	9,596.7	41,162.0	8.72	35.3	4.3	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,094.2	9,310.2	38,558.4	8.46	35.2	4.1	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	914.0	8,629.0	33,041.4	7.87	36.2	3.8	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	855.9	8,350.3	30,912.9	7.63	36.1	3.7	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	798.2	8,056.8	28,802.0	7.39	36.1	3.6	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	749.2	7,778.3	26,993.4	7.16	36.0	3.5	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	700.0	7,484.8	25,182.0	6.93	36.0	3.4	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,068.5	8,638.5	35,183.9	8.07	32.9	4.1	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	977.2	8,263.8	32,105.9	7.74	32.9	3.9	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	884.9	7,859.5	29,029.2	7.39	32.8	3.7	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	672.2	6,906.9	22,664.3	6.58	33.7	3.3	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	625.6	6,615.2	21,033.3	6.35	33.6	3.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	568.8	6,233.5	19,077.4	6.06	33.5	3.1	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	863.2	7,194.5	26,111.3	7.00	30.3	3.6	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	778.9	6,806.9	23,498.1	6.66	30.2	3.5	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	703.7	6,428.5	21,170.9	6.35	30.1	3.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	535.9	5,557.8	16,519.6	5.64	30.8	3.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	502.1	5,331.7	15,446.9	5.46	30.8	2.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	468.2	5,086.5	14,361.6	5.28	30.7	2.8	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	432.8	4,814.8	13,232.9	5.07	30.6	2.7	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	666.3	5,736.8	18,385.5	5.91	27.6	3.2	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	601.1	5,398.1	16,539.9	5.62	27.5	3.1	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	545.2	5,084.5	14,959.8	5.36	27.4	2.9	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	427.6	4,419.6	12,000.6	4.83	28.1	2.7	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	382.6	4,092.9	10,694.0	4.57	27.9	2.6	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	351.9	3,852.7	9,801.9	4.38	27.9	2.5	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	559.6	4,783.6	14,137.8	5.20	25.3	3.0	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	505.9	4,477.5	12,717.6	4.95	25.1	2.8	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	452.2	4,149.4	11,311.4	4.68	25.0	2.7	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	416.8	3,942.2	10,478.4	4.51	25.1	2.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	383.0	3,719.5	9,604.2	4.33	25.1	2.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	348.9	3,479.8	8,720.0	4.13	25.0	2.5	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	324.6	3,324.0	8,214.3	4.01	25.3	2.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	290.8	3,059.8	7,323.9	3.80	25.2	2.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	263.2	2,830.5	6,599.2	3.61	25.1	2.3	16.71	23.90	8.98	0.682	10.52

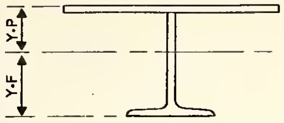


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 11 3/4 x 105 I-T	71.22	63.1	155.2	827.5	6.22	5.3	13.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	57.8	141.9	750.9	6.19	5.3	13.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	58.8	123.5	734.4	6.35	5.9	12.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	53.1	112.4	659.2	6.32	5.9	12.4	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	48.4	102.0	594.9	6.29	5.8	12.3	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	44.5	93.6	542.6	6.28	5.8	12.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	45.7	87.3	550.7	6.43	6.3	12.1	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	42.2	79.7	503.7	6.40	6.3	11.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	38.8	72.5	457.9	6.39	6.3	11.8	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	47.6	101.1	531.9	5.65	5.3	11.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	43.3	92.0	479.6	5.62	5.2	11.1	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	39.2	83.1	429.4	5.60	5.2	11.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	35.8	75.4	388.2	5.58	5.2	10.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	34.5	65.9	370.8	5.77	5.6	10.7	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	31.4	59.4	333.6	5.76	5.6	10.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	28.3	53.2	297.9	5.76	5.6	10.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	26.5	47.0	270.4	5.73	5.7	10.2	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	28.4	62.9	274.9	4.96	4.4	9.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	26.1	57.3	249.4	4.95	4.4	9.6	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	23.8	51.4	224.5	4.95	4.4	9.4	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	23.4	45.2	219.6	5.11	4.9	9.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	21.5	40.4	198.0	5.10	4.9	9.2	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	19.7	35.3	176.9	5.08	5.0	9.0	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	33.5	91.1	337.0	4.42	3.7	10.1	16.77	13.64	10.07	0.932	7.77
51 T	51.03	33.8	90.9	336.1	4.66	3.7	10.0	15.01	13.53	10.02	0.827	7.01
47 T	47.02	28.9	76.1	284.7	4.46	3.7	9.8	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	27.1	89.1	255.6	3.76	2.9	9.4	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	25.0	68.2	224.4	3.96	3.3	9.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	23.0	61.6	203.5	3.98	3.3	8.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	21.5	55.8	187.6	4.01	3.4	8.7	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	22.8	52.4	195.3	4.33	3.7	8.6	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	20.7	47.4	175.7	4.32	3.7	8.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	18.7	42.7	157.0	4.33	3.7	8.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	18.5	38.0	154.0	4.44	4.1	8.3	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	16.4	33.1	133.8	4.45	4.0	8.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	14.9	29.0	118.8	4.45	4.1	8.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	15.2	22.5	112.8	4.57	5.0	7.4	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	13.7	19.3	98.7	4.53	5.1	7.2	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	12.6	16.2	85.8	4.45	5.3	6.8	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	11.4	14.0	75.4	4.47	5.4	6.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	9.9	11.5	64.6	4.48	5.6	6.5	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	17.9	47.5	139.5	3.53	2.9	7.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	17.0	44.7	131.7	3.55	2.9	7.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	16.0	40.9	121.9	3.57	3.0	7.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 I-T	21.93	12.8	29.1	87.7	3.56	3.0	6.9	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	13.1	26.0	90.0	3.77	3.5	6.9	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	11.6	22.6	78.4	3.77	3.5	6.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	10.5	18.7	67.4	3.74	3.6	6.4	4.35	9.90	5.75	0.340	2.37

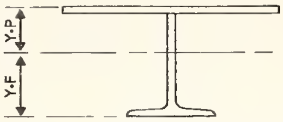


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 4 x 19 I-T	14.22	11.2	16.9	69.6	3.87	4.1	6.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	10.3	14.7	62.1	3.83	4.2	6.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	9.6	12.7	55.4	3.79	4.3	5.8	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	8.2	10.1	45.2	3.82	4.5	5.5	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	7.8	7.9	39.7	3.88	5.0	5.1	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	16.4	58.3	118.8	2.73	2.0	7.2	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	14.2	43.2	98.3	2.89	2.3	6.9	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	12.9	34.3	86.7	3.05	2.5	6.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	12.2	31.9	81.0	3.08	2.5	6.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	11.4	29.4	75.0	3.10	2.6	6.6	7.35	9.00	7.50	0.570	3.22
8 x 7 x 25 T	24.99	10.0	26.3	59.7	2.76	2.3	6.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	9.3	24.0	54.9	2.78	2.3	5.9	6.62	8.06	7.04	0.563	2.78
20 T	19.99	8.6	22.0	50.1	2.81	2.3	5.8	5.88	8.00	7.00	0.503	2.45
18 T	18.36	8.2	19.6	46.7	2.82	2.4	5.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	9.2	20.5	52.0	2.97	2.5	5.6	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	8.2	17.9	45.4	2.98	2.5	5.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	8.1	14.9	43.3	3.10	2.9	5.4	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	7.3	12.6	37.6	3.09	3.0	5.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	7.5	10.8	36.4	3.12	3.4	4.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	6.9	9.2	32.0	3.09	3.5	4.7	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	6.0	7.5	26.6	3.17	3.6	4.5	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	4.9	5.2	20.4	3.19	4.2	3.9	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	7.0	18.3	36.4	2.45	2.0	5.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	6.7	16.9	34.1	2.50	2.0	5.1	5.00	7.00	6.75	0.453	2.00
15 T	14.99	6.3	14.9	31.3	2.54	2.1	4.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	5.0	7.5	21.4	2.67	2.9	4.3	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	3.7	4.1	13.8	2.83	3.8	3.4	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	5.6	15.5	25.7	2.11	1.7	4.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	5.1	13.8	23.1	2.14	1.7	4.5	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	4.8	12.3	21.2	2.18	1.7	4.4	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	5.5	9.2	21.9	2.42	2.4	4.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	5.0	9.2	20.3	2.34	2.2	4.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	4.7	7.9	18.2	2.36	2.3	3.9	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	4.6	6.8	16.8	2.38	2.5	3.6	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	4.4	6.6	16.3	2.37	2.5	3.7	2.43	6.00	4.00	0.269	1.38
7 T	7.04	4.1	5.7	14.6	2.40	2.5	3.5	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	3.9	5.0	13.0	2.41	2.6	3.3	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	3.9	4.7	13.0	2.44	2.8	3.4	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	2.6	3.2	8.9	2.47	3.4	2.8	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	4.1	10.7	15.5	1.81	1.5	3.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	3.8	9.5	14.0	1.84	1.5	3.7	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	3.6	8.0	12.7	1.88	1.6	3.5	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	3.8	7.0	12.8	1.98	1.8	3.4	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	3.6	6.1	11.8	1.99	1.9	3.3	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	3.5	5.3	10.7	2.00	2.0	3.1	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	3.1	4.2	9.0	2.05	2.1	2.9	1.69	4.94	3.95	0.204	0.89



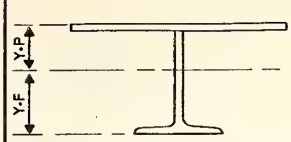
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

5.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 2 3/4 x 4.5 T	4.49	2.9	3.2	7.8	2.08	2.5	2.7	1.32	5.00	2.68	0.204	0.77
4 x 4 x 7.5 T	7.55	2.7	4.6	7.1	1.62	1.5	2.6	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	2.5	3.9	6.4	1.64	1.6	2.5	1.91	4.00	4.00	0.254	0.92
5.5 T	5.03	2.3	3.2	5.5	1.67	1.7	2.4	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.0	2.1	4.2	1.72	2.1	2.0	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.5	1.8	3.0	1.52	1.9	1.7	0.80	3.50	2.08	0.175	0.44
3 x 4 x 6 T	6.02	1.7	2.9	3.4	1.24	1.2	2.0	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	1.6	2.2	2.8	1.27	1.3	1.8	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.1	1.4	1.9	1.31	1.8	1.4	0.65	3.00	1.84	0.167	0.34



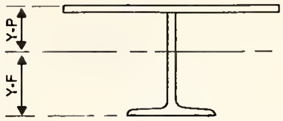
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 11 3/4 x 105 1-T	71.22	67.1	158.8	871.7	6.34	5.5	13.0	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	61.8	145.5	794.2	6.32	5.5	12.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	62.7	126.5	774.5	6.47	6.1	12.4	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	57.0	115.3	698.7	6.46	6.1	12.3	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	52.3	104.8	633.5	6.44	6.0	12.1	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	48.4	96.3	580.5	6.43	6.0	12.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	49.6	89.9	587.8	6.57	6.5	11.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	46.1	82.3	540.0	6.55	6.6	11.7	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	42.6	75.0	493.4	6.55	6.6	11.6	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 1-T	54.99	51.1	103.8	564.0	5.78	5.4	11.0	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	46.8	94.6	510.9	5.75	5.4	10.9	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	42.7	85.6	460.0	5.74	5.4	10.8	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	39.3	77.8	418.1	5.73	5.4	10.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	38.0	68.2	400.1	5.93	5.9	10.5	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	34.9	61.5	362.3	5.92	5.9	10.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	31.8	55.3	326.0	5.94	5.9	10.3	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	29.9	49.0	296.7	5.90	6.1	9.9	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 1-T	36.44	31.4	65.1	298.7	5.11	4.6	9.5	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	29.1	59.3	272.6	5.11	4.6	9.4	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	26.8	53.4	247.0	5.12	4.6	9.2	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	26.5	47.0	241.8	5.28	5.1	9.1	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	24.5	42.2	219.4	5.28	5.2	9.0	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	22.7	36.9	197.1	5.27	5.3	8.7	6.38	13.86	6.73	0.383	3.74
13 1/2 x 10 x 57 T	57.02	36.5	94.3	363.0	4.55	3.8	9.9	16.77	13.64	10.07	0.932	7.77
51 T	51.03	36.8	93.6	361.5	4.79	3.9	9.8	15.01	13.53	10.02	0.827	7.01
47 T	47.02	31.9	79.0	309.4	4.61	3.9	9.7	13.83	13.45	9.99	0.747	6.59
12 x 12 x 60 T	59.98	29.9	92.7	278.4	3.89	3.0	9.3	17.64	12.16	12.09	0.930	6.75
12 x 9 x 47 T	46.95	27.7	70.9	245.0	4.10	3.5	8.9	13.81	12.15	9.06	0.872	6.26
42 T	41.99	25.6	64.2	223.5	4.13	3.5	8.7	12.35	12.04	9.01	0.772	5.65
38 T	38.01	24.2	58.2	206.9	4.17	3.6	8.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	25.5	54.4	214.0	4.48	3.9	8.4	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	23.4	49.2	193.8	4.48	3.9	8.3	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	21.4	44.5	174.7	4.50	3.9	8.2	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	21.2	39.7	171.3	4.61	4.3	8.1	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	19.1	34.6	150.5	4.63	4.3	7.9	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	17.5	30.4	134.6	4.64	4.4	7.7	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	17.8	23.6	126.4	4.72	5.3	7.1	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	16.3	20.3	111.3	4.69	5.5	6.8	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	15.0	17.1	97.2	4.61	5.7	6.5	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	13.8	14.8	86.0	4.62	5.8	6.2	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	12.3	12.3	74.8	4.64	6.1	6.1	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	20.2	49.7	155.0	3.68	3.1	7.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	19.4	46.8	146.9	3.80	3.1	7.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	18.3	43.0	136.7	3.73	3.2	7.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 33 1-T	21.93	15.0	30.5	99.5	3.72	3.3	6.6	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	15.3	27.3	101.8	3.93	3.7	6.6	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	13.9	23.8	89.6	3.94	3.8	6.5	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	12.7	19.7	77.5	3.91	3.9	6.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	13.3	17.7	79.1	4.01	4.5	5.9	4.18	10.24	4.02	0.394	2.56



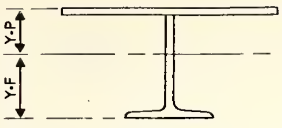
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 4 x 17 I-T	12.81	12.4	15.5	71.0	3.97	4.6	5.7	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	11.7	13.5	63.5	3.92	4.7	5.4	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	10.3	10.6	52.4	3.95	4.9	5.1	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	8.4	9.8	45.8	3.98	5.5	4.7	2.17	10.00	2.69	0.188	1.55
9 x 11 3/4 x 52.5 T	52.46	18.5	61.4	132.2	2.86	2.2	7.2	15.43	9.16	11.79	0.911	5.07
9 x 8 3/4 x 38.5 T	38.49	16.2	45.6	110.5	3.03	2.4	6.8	11.32	9.08	8.79	0.831	4.31
9 x 7 1/2 x 30 T	29.99	14.9	36.2	98.1	3.20	2.7	6.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	14.2	33.7	92.2	3.23	2.7	6.5	8.09	9.06	7.53	0.630	3.53
25 T	24.99	13.4	31.0	85.8	3.26	2.8	6.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	14.4	40.2	88.3	2.69	2.2	6.1	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	13.5	37.4	81.8	2.71	2.2	6.0	10.43	8.08	8.54	0.795	3.92
32 T	31.96	12.7	34.6	75.6	2.73	2.2	6.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	11.9	32.0	70.3	2.76	2.2	5.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	11.8	27.9	68.7	2.92	2.5	5.8	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	11.1	25.5	63.6	2.94	2.5	5.7	6.62	8.06	7.04	0.563	2.78
20 T	19.99	10.4	23.3	58.6	2.98	2.5	5.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	10.0	20.8	54.7	2.99	2.6	5.5	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	11.0	21.6	59.9	3.12	2.8	5.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	10.0	18.9	52.9	3.14	2.8	5.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	9.9	15.7	50.3	3.25	3.2	5.1	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	9.1	13.3	44.0	3.24	3.3	4.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	9.2	11.5	42.2	3.25	3.7	4.6	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	8.5	9.8	37.2	3.21	3.8	4.4	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	7.6	7.9	31.3	3.28	4.0	4.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.2	6.8	23.9	3.26	4.6	3.5	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	8.6	19.6	43.1	2.61	2.2	5.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	8.3	18.0	40.5	2.66	2.3	4.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	7.9	15.8	37.4	2.70	2.4	4.7	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	6.5	8.1	25.8	2.81	3.2	4.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	3.9	5.5	16.3	2.87	4.2	3.0	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	7.0	16.6	30.9	2.27	1.9	4.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	6.5	14.8	28.1	2.30	1.9	4.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	6.2	13.2	25.9	2.34	2.0	4.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	6.8	9.8	25.7	2.54	2.6	3.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	6.3	9.8	24.3	2.48	2.5	3.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	6.0	8.4	21.9	2.49	2.6	3.6	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	5.9	7.2	19.9	2.49	2.8	3.4	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	5.7	7.1	19.5	2.48	2.8	3.4	2.43	6.00	4.00	0.269	1.38
7 T	7.04	5.4	6.1	17.6	2.51	2.9	3.2	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.2	5.2	15.6	2.49	3.0	3.0	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.0	5.2	15.6	2.53	3.1	3.0	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	5.3	11.5	19.0	1.95	1.7	3.6	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	5.0	10.2	17.3	1.99	1.7	3.5	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	4.7	8.6	15.6	2.02	1.8	3.3	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	4.9	7.5	15.6	2.10	2.1	3.2	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	4.7	6.5	14.3	2.11	2.2	3.0	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	4.5	5.7	13.0	2.11	2.3	2.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.2	4.5	11.0	2.13	2.5	2.6	1.69	4.94	3.95	0.204	0.89



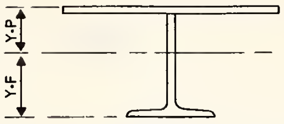
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

6.37# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
5 x 2 3/4 x 4.5 T	4.49	3.4	4.0	9.4	2.14	2.8	2.4	1.32	5.00	2.68	0.204	0.77
4 x 4 x 7.5 T	7.55	3.6	4.9	8.7	1.72	1.8	2.4	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	3.4	4.2	7.8	1.72	1.9	2.3	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.2	3.4	6.7	1.75	2.0	2.1	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.1	2.9	5.1	1.73	2.4	1.7	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.6	2.5	3.6	1.52	2.2	1.4	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	2.6	4.1	5.2	1.30	2.0	2.0	2.36	3.13	4.03	0.404	0.81
6 T	6.02	2.4	3.1	4.3	1.31	1.4	1.8	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.2	2.3	3.5	1.32	1.5	1.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.1	2.0	2.3	1.29	2.0	1.1	0.65	3.00	1.84	0.167	0.34



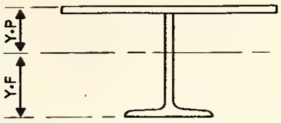
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
21 x 9 x 96 I-T	70.15	90.1	164.0	1,239.8	7.56	7.6	13.8	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	78.5	140.6	1,060.0	7.54	7.5	13.5	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	74.7	127.7	1,009.7	7.72	7.9	13.5	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	70.7	119.3	946.1	7.72	7.9	13.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	65.8	108.6	867.8	7.71	8.0	13.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	68.7	161.9	873.4	6.14	5.4	12.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	77.8	176.5	1,007.8	6.50	5.7	13.0	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	72.2	163.0	926.3	6.49	5.7	12.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	66.9	149.5	847.7	6.48	5.7	12.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	67.7	130.0	823.7	6.62	6.3	12.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	62.0	118.7	747.1	6.61	6.3	12.1	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	57.3	108.1	680.7	6.60	6.3	11.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	53.3	99.5	626.7	6.61	6.3	11.7	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	54.5	92.9	632.9	6.74	6.8	11.6	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	51.0	85.1	583.9	6.73	6.9	11.4	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	47.5	77.7	536.2	6.74	6.9	11.3	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	55.5	106.9	603.2	5.92	5.6	10.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	51.2	97.6	549.2	5.90	5.6	10.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	47.1	88.4	497.3	5.90	5.6	10.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	43.7	80.5	454.4	5.90	5.6	10.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	42.4	70.6	435.5	6.10	6.2	10.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	39.3	63.9	396.6	6.10	6.2	10.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	36.1	57.5	359.3	6.13	6.2	9.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	34.2	51.0	327.9	6.09	6.4	9.6	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	42.0	93.7	416.4	5.18	4.4	9.9	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	39.2	84.5	384.1	5.17	4.5	9.8	13.31	14.16	10.04	0.718	5.87
14 x 8 x 53 I-T	36.44	35.3	67.4	327.6	5.27	4.9	9.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	33.0	61.6	300.5	5.29	4.9	9.1	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	30.7	55.5	273.9	5.30	4.9	8.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	30.4	49.0	268.2	5.45	5.5	8.8	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	28.4	44.0	244.6	5.46	5.6	8.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	26.5	38.5	220.6	5.45	5.7	8.3	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	31.1	74.0	270.1	4.26	3.6	8.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	29.0	67.1	247.8	4.30	3.7	8.5	12.35	12.04	9.01	0.772	5.65
38 T	38.01	27.6	60.9	230.2	4.34	3.8	8.4	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	28.9	56.5	236.4	4.64	4.2	8.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	26.8	51.2	215.6	4.64	4.2	8.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	24.8	46.3	195.8	4.67	4.2	7.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	24.6	41.4	191.9	4.78	4.6	7.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	22.5	36.2	170.0	4.81	4.7	7.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	20.9	31.8	152.9	4.82	4.8	7.3	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	21.0	24.8	142.1	4.87	5.7	6.7	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	19.5	21.3	125.7	4.82	5.9	6.5	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	18.0	18.1	110.0	4.73	6.1	6.1	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	15.5	16.9	97.8	4.74	6.3	5.8	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	13.0	15.4	85.8	4.75	6.6	5.6	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	23.2	52.2	173.7	3.84	3.3	7.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	22.3	49.1	165.2	3.86	3.4	7.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	21.3	45.1	154.3	3.89	3.4	7.3	9.12	10.49	8.24	0.615	4.19



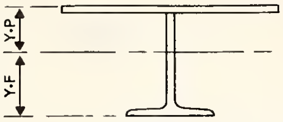
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
10 x 8 x 45 I-T	29.46	21.1	43.2	146.2	3.88	3.4	6.9	8.66	10.12	8.02	0.618	3.54
33 I-T	21.93	17.8	31.9	113.3	3.88	3.5	6.4	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	18.2	28.5	115.6	4.08	4.0	6.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	16.7	24.9	102.6	4.10	4.1	6.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	15.4	20.6	89.0	4.06	4.3	5.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	16.1	18.6	89.9	4.14	4.8	5.6	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	15.1	16.3	80.9	4.09	5.0	5.3	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	14.2	14.3	72.5	4.03	5.1	5.1	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	11.2	12.9	60.1	4.04	5.4	4.7	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	8.8	12.3	52.2	4.02	6.0	4.2	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	18.8	48.1	125.3	3.18	2.6	6.7	11.32	9.08	8.79	0.831	4.31
35 T	34.95	17.8	44.5	117.0	3.21	2.6	6.6	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	17.5	38.2	111.7	3.36	2.9	6.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	16.8	35.5	105.4	3.39	3.0	6.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	16.0	32.7	98.7	3.43	3.0	6.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	16.7	42.6	100.3	2.83	2.4	6.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	15.8	39.6	93.4	2.85	2.4	5.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	14.9	36.6	86.9	2.88	2.4	5.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	14.2	33.9	81.3	2.91	2.4	5.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	14.1	29.5	79.3	3.07	2.7	5.6	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	13.4	27.0	73.9	3.10	2.7	5.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	12.7	24.7	68.5	3.14	2.8	5.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	12.3	22.0	63.9	3.15	2.9	5.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	13.3	22.6	69.0	3.27	3.1	5.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	12.3	19.8	61.4	3.29	3.1	5.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	12.1	16.5	58.2	3.38	3.5	4.8	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	11.3	13.9	51.1	3.36	3.7	4.5	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	11.3	12.1	48.6	3.35	4.0	4.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	10.3	10.7	42.9	3.30	4.2	4.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.3	9.7	36.3	3.34	4.4	3.7	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.4	8.8	27.4	3.26	5.1	3.1	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	10.6	20.8	50.9	2.77	2.5	4.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	10.3	19.0	48.0	2.81	2.5	4.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	9.9	16.7	44.2	2.84	2.6	4.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	8.4	8.5	30.4	2.91	3.6	3.6	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.1	7.3	18.7	2.85	4.6	2.6	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	8.8	17.7	37.0	2.41	2.1	4.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	8.3	15.7	33.8	2.45	2.1	4.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	7.9	14.0	31.2	2.49	2.2	3.9	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	8.5	10.3	30.0	2.64	2.9	3.5	3.26	6.24	4.03	0.404	1.62
11 T	11.02	8.0	10.4	28.8	2.59	2.8	3.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	7.7	8.9	25.8	2.58	2.9	3.4	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	7.5	7.6	23.3	2.56	3.1	3.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	7.4	7.4	22.9	2.56	3.1	3.1	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.4	7.0	20.6	2.57	3.2	2.9	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.5	6.7	18.2	2.53	3.3	2.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.2	6.7	18.2	2.56	3.5	2.7	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	2.9	5.9	12.1	2.43	4.2	2.0	0.99	6.00	1.84	0.188	0.68



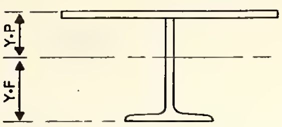
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	6.7	12.3	23.0	2.08	1.9	3.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	6.4	10.8	21.0	2.11	1.9	3.3	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	6.2	9.1	18.8	2.13	2.1	3.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	6.3	7.9	18.7	2.20	2.4	3.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	6.1	6.9	17.0	2.19	2.5	2.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	5.9	6.0	15.4	2.17	2.6	2.6	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.7	5.5	13.0	2.17	2.8	2.4	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.5	5.3	10.9	2.14	3.1	2.1	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	4.8	7.2	12.3	1.76	1.7	2.5	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	4.7	6.1	11.1	1.77	1.8	2.4	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	4.7	5.2	10.4	1.78	2.0	2.2	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.4	4.5	9.3	1.77	2.1	2.1	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.6	4.2	8.0	1.78	2.2	1.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.2	4.0	5.9	1.70	2.7	1.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	3.4	4.1	1.48	2.5	1.2	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	3.5	4.4	6.4	1.37	1.5	1.9	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.2	3.3	5.2	1.36	1.6	1.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.4	3.0	4.1	1.34	1.7	1.4	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	2.8	2.6	1.24	2.2	1.0	0.65	3.00	1.84	0.167	0.34



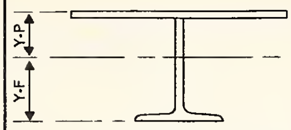
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
21 x 9 x 96 I-T	70.15	96.6	168.0	1,309.9	7.70	7.8	13.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	84.9	144.4	1,127.3	7.69	7.8	13.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	81.2	131.3	1,077.0	7.89	8.2	13.3	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	77.2	122.8	1,011.8	7.89	8.2	13.1	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	72.3	112.0	931.4	7.89	8.3	12.9	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	74.4	166.7	933.2	6.30	5.6	12.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	83.7	180.9	1,070.0	6.65	5.9	12.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	78.1	167.3	987.1	6.64	5.9	12.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	72.7	153.7	907.0	6.64	5.9	12.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	73.4	133.5	878.3	6.77	6.6	12.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	67.7	122.1	800.5	6.77	6.6	11.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	62.9	111.4	732.6	6.77	6.6	11.6	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	59.0	102.6	677.2	6.78	6.6	11.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	60.2	95.8	682.3	6.91	7.1	11.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	56.7	87.9	631.7	6.90	7.2	11.2	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	53.1	80.3	582.5	6.91	7.3	11.0	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	60.6	110.0	646.6	6.06	5.9	10.7	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	56.3	100.6	591.4	6.05	5.9	10.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	52.1	91.3	538.2	6.06	5.9	10.3	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	48.7	83.2	493.9	6.06	5.9	10.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	47.5	73.1	473.8	6.26	6.5	10.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	44.3	66.2	433.6	6.27	6.6	9.8	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	41.2	59.6	395.0	6.30	6.6	9.6	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	39.1	52.9	361.0	6.26	6.8	9.2	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	39.8	69.7	358.8	5.43	5.1	9.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	37.4	63.7	330.6	5.45	5.2	8.8	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	35.1	57.5	302.7	5.46	5.3	8.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	34.8	50.8	296.2	5.62	5.8	8.5	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	32.8	45.7	271.3	5.62	5.9	8.3	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	30.9	40.0	245.3	5.60	6.1	8.0	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	33.2	69.1	278.2	4.72	4.0	8.4	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	31.6	63.0	258.3	4.72	4.1	8.2	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	35.0	77.1	297.7	4.42	3.9	8.5	13.81	12.15	9.06	0.872	6.26
42 T	41.99	32.9	69.9	274.4	4.46	3.9	8.3	12.35	12.04	9.01	0.772	5.65
38 T	38.01	31.4	63.4	255.6	4.50	4.0	8.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	32.8	58.5	260.7	4.79	4.5	7.9	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	30.7	53.1	238.9	4.80	4.5	7.8	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	28.7	48.0	218.2	4.83	4.5	7.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	28.5	43.0	213.6	4.93	5.0	7.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	26.3	37.6	190.4	4.96	5.1	7.2	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	24.7	33.0	171.9	4.97	5.2	7.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	24.8	25.8	158.1	4.98	6.1	6.4	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	22.2	23.1	140.3	4.93	6.3	6.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	18.8	21.7	122.8	4.82	6.5	5.7	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	16.2	20.4	109.3	4.80	6.8	5.4	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	13.6	18.9	96.4	4.80	7.1	5.1	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	26.6	54.5	194.0	3.99	3.6	7.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	25.8	51.3	185.0	4.02	3.6	7.2	10.01	10.57	8.27	0.685	4.54
31 T	31.01	24.7	47.1	173.3	4.05	3.7	7.0	9.12	10.49	8.24	0.615	4.19



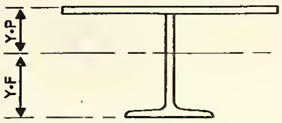
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
10 x 8 x 33 I-T	21.93	20.9	33.2	127.8	4.03	3.9	6.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	21.4	29.7	129.9	4.21	4.4	6.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	19.9	25.9	115.9	4.22	4.5	5.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	18.5	21.5	100.7	4.17	4.7	5.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	19.2	19.4	100.8	4.24	5.2	5.3	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	17.0	18.2	90.8	4.18	5.3	5.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	14.8	17.3	81.3	4.10	5.5	4.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	11.6	15.8	67.5	4.08	5.8	4.3	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.1	15.2	58.2	4.02	6.4	3.8	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 38.5 T	38.49	21.8	50.5	141.4	3.33	2.8	6.5	11.32	9.08	8.79	0.831	4.31
35 T	34.95	20.8	46.7	132.6	3.36	2.8	6.4	10.28	9.00	8.75	0.751	3.94
9 x 7 1/2 x 30 T	29.99	20.5	40.0	126.4	3.51	3.2	6.2	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	19.7	37.2	119.6	3.54	3.2	6.1	8.09	9.06	7.53	0.630	3.53
25 T	24.99	18.9	34.2	112.3	3.57	3.3	5.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	19.4	44.8	113.3	2.96	2.5	5.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	18.4	41.6	106.1	2.99	2.5	5.8	10.43	8.08	8.54	0.795	3.92
32 T	31.96	17.5	38.4	99.0	3.02	2.6	5.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	16.8	35.6	93.0	3.06	2.6	5.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	16.7	31.0	90.7	3.21	2.9	5.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	16.0	28.3	84.7	3.24	3.0	5.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	15.3	25.8	78.9	3.28	3.1	5.2	5.88	8.00	7.00	0.503	2.45
18 T	18.36	14.8	23.0	73.5	3.28	3.2	5.0	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	15.9	23.5	78.6	3.39	3.3	4.9	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	14.9	20.5	70.2	3.40	3.4	4.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	14.7	17.2	66.2	3.48	3.9	4.5	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	13.8	14.5	58.2	3.44	4.0	4.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	12.5	13.8	54.8	3.41	4.4	4.0	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	10.7	13.1	48.4	3.35	4.5	3.7	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.6	12.1	40.9	3.36	4.8	3.4	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.6	11.1	30.5	3.21	5.5	2.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	12.9	21.8	59.0	2.90	2.7	4.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	12.6	19.9	55.6	2.94	2.8	4.4	5.00	7.00	6.75	0.453	2.00
15 T	14.99	12.1	17.5	51.2	2.96	2.9	4.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	8.9	10.5	34.8	2.96	3.9	3.3	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.2	9.3	20.8	2.78	5.0	2.2	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	10.8	18.6	43.2	2.53	2.3	4.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	10.3	16.5	39.6	2.57	2.4	3.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	9.9	14.6	36.5	2.60	2.5	3.7	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	10.5	10.7	34.2	2.70	3.2	3.3	3.26	6.24	4.03	0.404	1.62
11 T	11.02	10.0	10.8	33.1	2.66	3.1	3.3	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.3	9.6	29.6	2.64	3.2	3.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	7.8	9.4	26.5	2.60	3.4	2.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	7.7	9.2	26.1	2.60	3.4	2.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	6.7	8.8	23.5	2.59	3.5	2.7	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	5.7	8.5	20.5	2.53	3.6	2.4	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.4	8.5	20.6	2.55	3.8	2.4	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.0	7.6	13.3	2.34	4.5	1.7	0.99	6.00	1.84	0.188	0.68

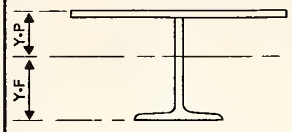


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
5 x 5 3/4 x 14.5 T	14.52	8.4	12.9	27.1	2.18	2.1	3.2	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	8.0	11.3	24.7	2.20	2.2	3.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	7.7	9.5	22.0	2.20	2.3	2.8	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	7.9	8.2	21.6	2.26	2.6	2.7	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.2	7.7	19.6	2.23	2.7	2.6	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.2	7.4	17.6	2.20	2.8	2.4	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	4.8	7.0	14.8	2.17	3.1	2.1	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.6	6.7	12.3	2.11	3.4	1.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	6.1	7.5	14.5	1.82	1.9	2.4	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	5.9	6.4	13.0	1.82	2.0	2.2	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.4	5.9	12.1	1.82	2.2	2.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.5	5.7	10.7	1.79	2.4	1.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.7	5.4	9.2	1.77	2.5	1.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.2	5.1	6.5	1.65	2.9	1.3	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	4.3	4.5	1.42	2.7	1.1	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.4	4.6	7.6	1.41	1.6	1.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.4	4.1	6.0	1.37	1.8	1.5	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.5	3.9	4.7	1.33	1.9	1.2	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	3.5	2.9	1.18	2.4	0.8	0.65	3.00	1.84	0.167	0.34



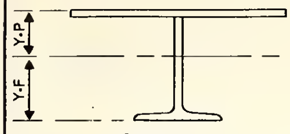
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	133.2	252.4	2,140.7	8.94	8.5	16.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	124.2	232.9	1,977.6	8.95	8.5	15.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	115.7	213.0	1,818.7	8.97	8.5	15.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	120.7	193.3	1,822.8	9.03	9.4	15.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	111.1	173.4	1,647.1	9.03	9.5	14.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	103.8	156.4	1,506.7	9.00	9.6	14.5	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	104.2	172.2	1,388.4	7.85	8.1	13.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	92.4	148.4	1,202.2	7.86	8.1	13.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	88.8	135.1	1,151.6	8.06	8.5	13.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	84.8	126.4	1,084.5	8.06	8.6	12.8	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	79.8	115.3	1,001.6	8.06	8.7	12.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	81.0	171.7	1,000.4	6.46	5.8	12.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	90.5	185.6	1,139.8	6.80	6.1	12.6	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	84.9	171.8	1,055.2	6.80	6.1	12.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	79.5	158.0	973.3	6.80	6.2	12.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	80.1	137.2	939.1	6.92	6.8	11.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	74.3	125.6	859.8	6.93	6.8	11.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	69.5	114.7	789.9	6.93	6.9	11.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	65.6	105.7	732.8	6.95	6.9	11.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	66.8	98.7	736.5	7.07	7.5	11.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	63.2	90.7	684.0	7.06	7.5	10.8	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	59.6	83.0	633.0	7.08	7.6	10.6	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	66.6	113.3	694.8	6.20	6.1	10.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	62.2	103.7	638.1	6.20	6.2	10.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	58.0	94.2	583.1	6.21	6.2	10.1	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	54.5	85.9	537.2	6.22	6.3	9.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	53.4	75.4	515.5	6.41	6.8	9.7	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	50.1	68.4	473.6	6.43	6.9	9.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	47.0	61.7	433.3	6.46	7.0	9.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	44.8	54.7	396.4	6.41	7.2	8.8	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	45.0	72.0	392.8	5.59	5.5	8.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	42.6	65.8	363.1	5.60	5.5	8.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	40.2	59.3	333.7	5.62	5.6	8.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	40.0	52.6	326.2	5.76	6.2	8.2	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	37.9	47.3	299.6	5.76	6.3	7.9	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	35.9	41.4	271.3	5.73	6.5	7.6	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	37.9	71.4	307.6	4.88	4.3	8.1	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	36.2	65.1	286.3	4.88	4.4	7.9	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	39.5	80.1	328.2	4.57	4.1	8.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	37.4	72.6	303.5	4.62	4.2	8.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	35.9	65.8	283.3	4.66	4.3	7.9	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	37.4	60.4	287.0	4.93	4.7	7.7	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	35.2	54.9	264.1	4.94	4.8	7.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	33.2	49.6	242.2	4.98	4.9	7.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	33.0	44.5	236.8	5.07	5.3	7.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	30.8	38.8	211.8	5.09	5.5	6.9	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	29.1	34.1	191.6	5.09	5.6	6.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	26.7	29.1	174.6	5.06	6.5	6.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	23.0	27.3	155.1	4.99	6.7	5.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	19.4	25.7	135.7	4.87	7.0	5.3	3.86	12.00	4.00	0.269	2.76

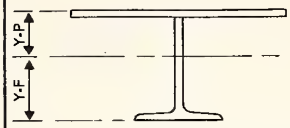


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 14 I-T	11.22	16.7	24.4	120.7	4.83	7.2	4.9	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	14.0	22.9	106.6	4.80	7.6	4.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	30.6	56.7	216.1	4.14	3.8	7.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	29.7	53.4	206.5	4.17	3.9	7.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	28.6	49.0	193.9	4.20	4.0	6.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	28.2	46.4	182.0	4.16	3.9	6.5	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	26.3	40.5	162.5	4.16	4.0	6.2	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	24.6	34.3	143.0	4.15	4.2	5.8	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	25.2	30.7	144.9	4.32	4.7	5.8	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	23.6	26.8	129.6	4.32	4.8	5.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	22.1	22.2	112.5	4.25	5.1	5.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	20.0	22.8	111.9	4.30	5.6	4.9	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	17.6	21.7	100.6	4.22	5.7	4.6	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	15.3	20.7	90.1	4.13	5.9	4.4	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	12.0	19.1	74.6	4.07	6.2	3.9	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.4	18.5	63.8	3.97	6.8	3.4	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	23.9	41.7	142.2	3.65	3.4	6.0	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	23.1	38.7	134.7	3.68	3.5	5.8	8.09	9.06	7.53	0.630	3.53
25 T	24.99	22.3	35.6	126.8	3.71	3.6	5.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	22.4	46.9	127.6	3.09	2.7	5.7	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	21.5	43.6	119.8	3.12	2.8	5.6	10.43	8.08	8.54	0.795	3.92
32 T	31.96	20.6	40.2	112.2	3.16	2.8	5.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	19.8	37.1	105.7	3.19	2.8	5.3	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	19.8	32.3	102.7	3.34	3.2	5.2	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	19.0	29.4	96.1	3.36	3.3	5.0	6.62	8.06	7.04	0.563	2.78
20 T	19.99	18.3	26.8	89.7	3.40	3.3	4.9	5.88	8.00	7.00	0.503	2.45
18 T	18.36	17.8	23.9	83.4	3.39	3.5	4.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	18.9	24.3	88.4	3.48	3.6	4.7	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	17.8	21.2	79.1	3.49	3.7	4.4	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	17.7	17.7	74.3	3.55	4.2	4.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.0	16.7	65.1	3.49	4.4	3.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.0	16.6	61.0	3.44	4.7	3.7	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	11.1	15.8	53.7	3.36	4.9	3.4	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	8.8	14.9	45.2	3.34	5.1	3.0	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	5.7	13.7	33.3	3.13	5.8	2.4	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	15.6	22.7	67.5	3.01	3.0	4.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	15.2	20.7	63.5	3.04	3.1	4.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	14.7	18.1	58.3	3.05	3.2	4.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.2	12.9	39.0	2.98	4.2	3.0	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	4.3	11.5	22.7	2.69	5.3	2.0	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	13.1	19.4	49.7	2.63	2.6	3.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	12.5	17.1	45.5	2.66	2.7	3.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	12.2	15.1	41.9	2.68	2.8	3.5	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.0	12.7	38.3	2.73	3.5	3.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.2	12.2	37.4	2.71	3.3	3.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.6	11.7	33.3	2.67	3.5	2.8	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.1	11.4	29.6	2.60	3.7	2.6	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.0	11.3	29.2	2.60	3.7	2.6	2.43	6.00	4.00	0.269	1.38



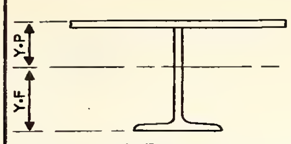
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
6 x 4 x 7 T	7.04	6.8	10.9	26.1	2.57	3.8	2.4	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	5.8	10.5	22.7	2.49	3.9	2.2	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.6	10.6	22.8	2.52	4.1	2.2	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.0	9.5	14.4	2.24	4.7	1.5	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	10.3	13.4	31.2	2.25	2.3	3.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	9.9	11.7	28.5	2.27	2.4	2.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	9.6	9.8	25.2	2.25	2.6	2.6	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.5	9.8	24.5	2.29	2.9	2.5	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.4	9.5	22.1	2.25	3.0	2.3	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.4	9.2	19.7	2.20	3.1	2.2	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.0	8.7	16.4	2.15	3.3	1.9	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.7	8.4	13.5	2.05	3.6	1.6	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	7.6	7.8	16.6	1.86	2.1	2.2	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.6	7.4	14.8	1.84	2.2	2.0	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.5	7.4	13.6	1.82	2.5	1.9	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.7	7.1	12.0	1.78	2.6	1.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	6.8	10.2	1.74	2.7	1.5	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	6.3	7.1	1.58	3.1	1.1	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.7	5.4	4.9	1.35	2.8	0.9	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.8	5.5	8.7	1.43	1.8	1.6	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.5	5.2	6.8	1.37	1.9	1.3	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.5	4.8	5.2	1.30	2.1	1.1	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	4.4	3.1	1.11	2.5	0.7	0.65	3.00	1.84	0.167	0.34



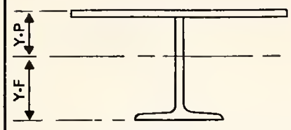
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x12 x120 I-T	84.70	143.2	258.2	2,264.6	9.11	8.8	15.8	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	134.2	238.5	2,099.1	9.13	8.8	15.6	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	125.7	218.3	1,936.9	9.16	8.9	15.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	130.5	198.0	1,931.8	9.19	9.8	14.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	120.8	177.8	1,752.0	9.20	9.9	14.5	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	113.4	160.6	1,607.0	9.18	10.0	14.2	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	112.7	176.6	1,473.3	8.00	8.3	13.1	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	100.9	152.3	1,282.8	8.01	8.4	12.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	97.4	138.8	1,231.4	8.22	8.9	12.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	93.3	129.9	1,162.1	8.22	8.9	12.5	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	88.3	118.6	1,076.0	8.22	9.1	12.2	13.54	20.98	8.24	0.615	8.39
18 x12 x 75 T	75.07	88.5	176.7	1,073.2	6.63	6.1	12.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	98.2	190.4	1,215.7	6.95	6.4	12.4	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	92.6	176.3	1,129.0	6.96	6.4	12.2	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	87.1	162.2	1,044.8	6.97	6.4	12.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	87.6	140.9	1,004.6	7.07	7.1	11.5	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	81.8	129.1	923.3	7.09	7.2	11.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	76.9	117.9	851.0	7.09	7.2	11.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	72.9	108.8	791.8	7.11	7.3	10.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	74.1	101.6	793.9	7.22	7.8	10.7	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	70.5	93.4	739.2	7.21	7.9	10.5	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	66.9	85.5	685.9	7.23	8.0	10.3	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	73.2	116.5	746.5	6.35	6.4	10.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	68.8	106.7	687.8	6.35	6.4	10.0	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	64.6	96.9	630.8	6.36	6.5	9.8	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	61.0	88.5	582.9	6.37	6.6	9.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	60.0	77.7	559.2	6.55	7.2	9.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	56.7	70.5	515.2	6.56	7.3	9.1	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	53.5	63.5	472.8	6.60	7.4	8.8	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	51.2	56.4	432.6	6.53	7.7	8.5	7.78	15.84	6.99	0.428	4.73
14 x 8 x 53 I-T	36.44	50.8	74.1	428.5	5.72	5.8	8.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	48.3	67.7	397.0	5.74	5.9	8.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	45.9	61.1	365.7	5.75	6.0	8.0	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	45.7	54.2	357.1	5.88	6.6	7.8	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	43.6	48.7	328.4	5.88	6.7	7.5	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	41.5	42.7	297.5	5.83	7.0	7.2	6.38	13.86	6.73	0.383	3.74
12 x10 x 58 I-T	37.58	43.1	73.5	338.4	5.02	4.6	7.9	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	41.3	67.0	315.5	5.02	4.7	7.6	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	44.6	82.9	360.7	4.72	4.4	8.1	13.81	12.15	9.06	0.872	6.26
42 T	41.99	42.5	75.1	334.4	4.77	4.5	7.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	40.9	68.1	312.5	4.80	4.6	7.6	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	42.5	62.2	314.5	5.05	5.1	7.4	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	40.3	56.5	290.2	5.07	5.1	7.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	38.2	51.0	266.9	5.10	5.2	7.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	38.1	45.8	260.4	5.18	5.7	6.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	35.8	40.0	233.4	5.19	5.8	6.5	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	34.1	35.1	211.2	5.17	6.0	6.2	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	27.5	33.9	190.8	5.11	6.9	5.6	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	23.7	32.0	169.5	5.03	7.1	5.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	20.0	30.3	148.0	4.88	7.4	4.9	3.86	12.00	4.00	0.269	2.76



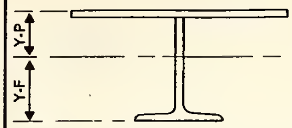
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
12 x 4 x 14 I-T	11.22	17.2	28.9	131.4	4.82	7.6	4.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	14.4	27.3	116.0	4.76	8.0	4.2	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	35.1	58.7	239.4	4.27	4.1	6.8	10.73	10.62	8.29	0.740	4.83
34 T	34.03	34.1	55.3	229.1	4.30	4.1	6.7	10.01	10.57	8.27	0.685	4.54
31 T	31.01	33.0	50.7	215.2	4.33	4.2	6.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	32.5	47.9	201.3	4.27	4.2	6.2	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	30.5	41.7	180.1	4.26	4.3	5.9	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	28.7	35.3	158.5	4.24	4.5	5.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	29.4	31.6	160.0	4.40	5.1	5.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	27.5	27.7	143.2	4.39	5.2	5.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	22.8	26.1	124.0	4.30	5.4	4.7	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	20.6	26.8	122.6	4.33	5.9	4.6	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	18.1	25.6	110.2	4.24	6.1	4.3	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	15.7	24.5	98.4	4.13	6.3	4.0	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	12.3	22.9	81.1	4.03	6.6	3.5	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.6	22.1	68.8	3.89	7.2	3.1	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	27.7	43.2	158.6	3.77	3.7	5.7	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	26.9	40.1	150.4	3.79	3.8	5.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	26.1	36.8	141.7	3.82	3.8	5.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	25.8	48.8	142.7	3.21	2.9	5.5	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	24.9	45.3	134.3	3.24	3.0	5.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	24.0	41.7	126.0	3.27	3.0	5.3	9.40	8.00	8.50	0.715	3.54
29 T	28.97	23.2	38.5	118.8	3.30	3.1	5.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	23.2	33.4	115.1	3.44	3.4	5.0	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	22.4	30.4	107.7	3.46	3.5	4.8	6.62	8.06	7.04	0.563	2.78
20 T	19.99	21.7	27.7	100.6	3.49	3.6	4.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	21.1	24.7	93.4	3.47	3.8	4.4	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	22.3	25.0	98.3	3.55	3.9	4.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	21.1	21.8	87.9	3.54	4.0	4.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	18.2	21.0	82.1	3.58	4.5	3.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.4	19.9	71.8	3.51	4.7	3.6	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.3	19.8	66.9	3.45	5.0	3.4	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.4	18.8	58.7	3.35	5.2	3.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.0	17.9	49.1	3.28	5.4	2.7	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.8	16.6	35.8	3.03	6.1	2.2	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	18.5	23.5	76.0	3.09	3.2	4.1	5.59	7.06	6.78	0.513	2.20
17 T	17.00	18.1	21.3	71.3	3.11	3.3	3.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	17.6	18.6	65.3	3.10	3.5	3.7	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.5	15.6	43.0	2.96	4.5	2.8	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.4	14.0	24.2	2.59	5.5	1.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	15.6	20.0	56.2	2.71	2.8	3.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	15.1	17.6	51.4	2.72	2.9	3.4	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	14.7	15.5	47.2	2.73	3.0	3.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.3	15.2	42.3	2.74	3.7	2.8	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.5	14.6	41.6	2.72	3.6	2.8	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	9.8	14.1	36.8	2.67	3.8	2.6	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.3	13.7	32.5	2.58	3.9	2.4	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.2	13.6	32.0	2.58	3.9	2.4	2.43	6.00	4.00	0.269	1.38



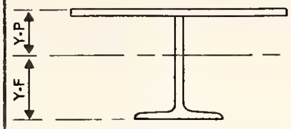
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 4 x 7 T	7.04	7.0	13.2	28.5	2.54	4.1	2.2	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	5.9	12.7	24.6	2.44	4.2	1.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.7	12.8	24.7	2.46	4.3	1.9	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.1	11.5	15.3	2.14	4.9	1.3	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	12.4	13.8	35.3	2.31	2.5	2.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.0	12.1	32.0	2.30	2.7	2.7	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.0	11.6	28.1	2.27	2.8	2.4	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.7	11.8	27.1	2.29	3.1	2.3	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.6	11.4	24.4	2.24	3.2	2.1	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.5	11.1	21.7	2.18	3.3	2.0	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.1	10.6	17.9	2.10	3.5	1.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.8	10.1	14.5	1.98	3.8	1.4	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.0	9.3	18.7	1.88	2.3	2.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.7	9.0	16.5	1.84	2.4	1.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.7	8.9	15.0	1.81	2.7	1.7	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.8	8.6	13.1	1.75	2.8	1.5	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.8	8.2	11.1	1.70	2.9	1.3	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	7.6	7.6	1.51	3.3	1.0	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	6.4	5.2	1.28	3.0	0.8	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	4.9	6.7	9.7	1.43	2.0	1.4	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.6	6.3	7.5	1.35	2.1	1.2	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	5.8	5.7	1.26	2.2	1.0	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.2	5.2	3.3	1.04	2.6	0.6	0.65	3.00	1.84	0.167	0.34

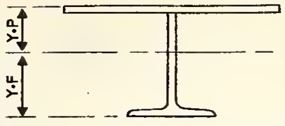


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x12 x120 I-T	84.70	154.9	264.3	2,403.2	9.29	9.1	15.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	145.8	244.3	2,234.4	9.32	9.1	15.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	137.2	223.8	2,068.0	9.35	9.2	15.1	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	141.8	203.0	2,052.8	9.36	10.1	14.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	132.0	182.4	1,867.9	9.37	10.2	14.2	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	124.5	164.9	1,717.4	9.35	10.4	13.8	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	122.5	181.0	1,567.6	8.16	8.7	12.8	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	110.6	156.4	1,371.7	8.17	8.8	12.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	107.3	142.5	1,319.0	8.37	9.3	12.3	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	103.1	133.5	1,246.9	8.38	9.3	12.1	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	98.0	121.9	1,157.0	8.38	9.5	11.8	13.54	20.98	8.24	0.615	8.39
18 x12 x 75 T	75.07	97.1	181.8	1,154.3	6.79	6.3	11.9	22.08	17.92	11.97	0.940	11.20
18 x11 3/4 x114 I-T	77.40	107.2	195.3	1,300.2	7.11	6.7	12.1	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	101.4	180.9	1,211.0	7.12	6.7	11.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	95.9	166.6	1,124.0	7.13	6.7	11.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	96.2	144.7	1,076.8	7.21	7.4	11.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	90.4	132.6	993.1	7.24	7.5	11.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	85.5	121.2	917.8	7.24	7.6	10.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	81.4	111.7	856.0	7.26	7.7	10.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	82.7	104.5	856.2	7.36	8.2	10.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	79.0	96.0	798.7	7.35	8.3	10.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	75.3	87.9	742.7	7.36	8.5	9.9	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	81.0	119.7	803.3	6.48	6.7	9.9	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	76.5	109.7	742.3	6.49	6.8	9.7	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	72.2	99.7	682.7	6.50	6.9	9.5	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	68.6	91.0	632.3	6.51	7.0	9.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	67.6	79.9	606.1	6.68	7.6	9.0	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	64.2	72.5	559.6	6.68	7.7	8.7	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	61.0	65.3	514.5	6.71	7.9	8.4	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	58.0	58.5	470.7	6.63	8.1	8.0	7.78	15.84	6.99	0.428	4.73
14 x10 x 74 I-T	49.25	64.8	105.4	581.5	5.78	5.5	9.0	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	61.9	95.7	543.8	5.79	5.7	8.8	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	58.7	88.4	501.2	5.81	5.7	8.5	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	57.5	76.1	466.9	5.85	6.1	8.1	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	55.0	69.5	433.2	5.86	6.2	7.9	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	52.5	62.7	399.7	5.86	6.4	7.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	52.4	55.7	389.5	5.98	7.0	7.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	50.0	50.2	358.5	5.96	7.2	7.1	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	43.8	48.0	324.6	5.90	7.4	6.8	6.38	13.86	6.73	0.383	3.74
12 x10 x 58 I-T	37.58	49.1	75.5	371.7	5.15	4.9	7.6	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	47.3	68.8	346.8	5.15	5.0	7.3	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	50.5	85.7	396.1	4.86	4.6	7.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	48.3	77.6	367.9	4.91	4.7	7.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	46.7	70.3	344.0	4.94	4.9	7.4	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	48.4	63.9	344.0	5.17	5.4	7.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	46.1	58.0	317.9	5.17	5.5	6.9	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	44.0	52.3	292.8	5.20	5.6	6.7	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	43.9	47.0	285.1	5.27	6.1	6.5	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	41.0	41.6	255.8	5.26	6.2	6.2	6.30	12.08	6.52	0.465	3.20



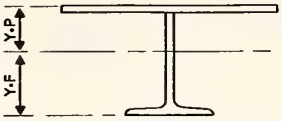
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 6 1/2 x 27 I-T	18.80	36.0	39.7	231.3	5.23	6.4	5.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	28.2	39.4	207.3	5.13	7.3	5.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	24.3	37.4	183.9	5.03	7.6	4.9	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	20.6	35.5	160.2	4.86	7.8	4.5	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	17.6	34.0	141.9	4.77	8.0	4.2	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	14.8	32.4	125.0	4.69	8.5	3.9	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	40.2	60.7	264.4	4.40	4.4	6.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	39.3	57.1	253.2	4.42	4.4	6.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	38.1	52.3	237.9	4.44	4.6	6.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	37.4	49.2	221.7	4.37	4.5	5.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	35.3	42.8	198.5	4.35	4.6	5.6	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	33.4	36.2	174.5	4.31	4.8	5.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	32.5	34.2	175.4	4.46	5.4	5.1	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	28.2	32.5	157.0	4.43	5.6	4.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	23.4	30.7	135.6	4.31	5.8	4.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	21.1	31.4	133.3	4.33	6.3	4.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	18.5	30.1	119.6	4.22	6.5	4.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.1	28.8	106.5	4.10	6.6	3.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	12.6	27.1	87.3	3.96	7.0	3.2	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.8	26.3	73.5	3.79	7.5	2.8	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 32 T	31.96	31.5	48.6	176.8	3.79	3.6	5.6	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	32.1	44.6	176.1	3.87	3.9	5.5	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	31.3	41.3	166.9	3.89	4.0	5.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	30.4	37.9	157.2	3.91	4.1	5.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	29.8	50.7	159.0	3.32	3.1	5.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	28.8	47.0	149.9	3.35	3.2	5.2	10.43	8.08	8.54	0.795	3.92
32 T	31.96	27.9	43.2	140.7	3.38	3.3	5.1	9.40	8.00	8.50	0.715	3.54
29 T	28.97	27.1	39.8	132.7	3.40	3.3	4.9	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	27.1	34.5	128.1	3.53	3.7	4.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	26.3	31.3	119.8	3.54	3.8	4.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	25.5	28.5	111.9	3.56	3.9	4.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	24.9	25.4	103.5	3.52	4.1	4.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	25.7	26.1	108.4	3.60	4.2	4.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	22.2	24.9	96.8	3.58	4.4	3.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	18.6	24.8	89.9	3.59	4.8	3.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	15.7	23.6	78.4	3.49	5.0	3.3	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.6	23.4	72.6	3.42	5.3	3.1	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.6	22.3	63.5	3.30	5.5	2.8	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.2	21.3	52.8	3.21	5.7	2.5	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	5.9	19.7	38.0	2.92	6.4	1.9	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	21.9	24.1	84.7	3.15	3.5	3.9	5.59	7.06	6.78	0.513	2.20
17 T	17.00	21.5	21.9	79.3	3.16	3.6	3.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.1	20.9	72.3	3.14	3.8	3.5	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.7	18.6	46.7	2.92	4.8	2.5	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.4	16.6	25.6	2.47	5.8	1.5	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	18.6	20.6	62.8	2.76	3.1	3.4	5.29	6.12	6.56	0.560	1.86



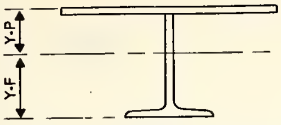
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
6 x 6 1/2 x 15.5 T	15.50	18.0	18.1	57.3	2.76	3.2	3.2	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	15.9	17.5	52.4	2.75	3.3	3.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	11.6	18.0	46.2	2.73	4.0	2.6	3.26	6.24	4.03	0.404	1.62
11 T	11.02	11.8	17.4	45.6	2.72	3.9	2.6	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.0	16.8	40.2	2.64	4.0	2.4	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.5	16.3	35.2	2.55	4.2	2.2	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.3	16.2	34.7	2.54	4.2	2.1	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.1	15.7	30.8	2.48	4.3	2.0	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.0	15.1	26.4	2.37	4.4	1.7	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.8	15.2	26.5	2.38	4.6	1.7	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.1	13.6	16.1	2.03	5.1	1.2	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.2	14.8	39.3	2.34	2.8	2.7	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.4	14.4	35.6	2.32	2.9	2.5	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.2	13.9	31.0	2.27	3.0	2.2	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	8.9	14.1	29.7	2.28	3.3	2.1	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.7	13.7	26.6	2.21	3.4	1.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.7	13.2	23.5	2.14	3.5	1.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	12.6	19.2	2.04	3.7	1.5	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.8	12.1	15.5	1.91	4.0	1.3	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.2	11.1	20.6	1.87	2.5	1.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	6.9	10.8	18.1	1.82	2.6	1.7	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.8	10.6	16.4	1.78	2.8	1.5	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.9	10.3	14.2	1.71	2.9	1.4	1.91	4.00	4.00	0.254	0.92
5 T	5.03	3.9	9.8	11.9	1.64	3.1	1.2	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.3	9.0	8.0	1.43	3.4	0.9	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	7.6	5.5	1.21	3.1	0.7	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.0	8.0	10.6	1.42	2.1	1.3	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	7.5	8.2	1.32	2.2	1.1	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	6.9	6.1	1.21	2.3	0.9	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	6.0	3.5	0.98	2.7	0.6	0.65	3.00	1.84	0.167	0.34

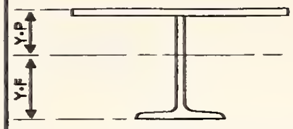


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	167.3	270.1	2,546.2	9.46	9.4	15.2	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	158.2	249.9	2,373.7	9.49	9.5	15.0	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	149.6	229.0	2,202.3	9.52	9.6	14.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	153.9	207.7	2,176.7	9.52	10.5	14.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	144.0	186.8	1,985.9	9.52	10.6	13.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	136.4	168.9	1,829.3	9.50	10.8	13.4	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	133.1	185.3	1,664.2	8.30	9.0	12.5	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	121.1	160.1	1,462.1	8.31	9.1	12.1	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	117.9	146.0	1,407.7	8.51	9.6	11.9	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	113.7	136.7	1,332.4	8.52	9.7	11.7	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	108.5	125.0	1,238.3	8.51	9.9	11.4	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	106.4	186.6	1,237.7	6.95	6.6	11.6	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	116.7	199.9	1,387.3	7.26	6.9	11.9	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	110.9	185.3	1,295.2	7.27	7.0	11.7	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	105.3	170.6	1,205.0	7.29	7.1	11.4	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	105.5	148.2	1,150.3	7.35	7.8	10.9	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	99.7	135.8	1,063.7	7.37	7.8	10.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	94.7	124.1	985.2	7.38	7.9	10.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	90.6	114.5	920.4	7.39	8.0	10.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	91.8	107.1	918.6	7.48	8.6	10.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	88.0	98.4	858.1	7.47	8.7	9.7	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	84.3	90.1	798.9	7.47	8.9	9.5	10.76	18.00	7.50	0.570	6.44
16 x 8 1/2 x 78 I-T	54.99	89.2	122.7	860.9	6.61	7.0	9.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	84.7	112.4	797.2	6.61	7.1	9.4	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	80.3	102.2	734.8	6.62	7.2	9.2	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	76.6	93.2	681.6	6.62	7.3	8.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	75.7	81.9	652.5	6.78	8.0	8.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	72.3	74.2	603.2	6.77	8.1	8.3	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	66.8	69.1	555.2	6.79	8.3	8.0	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	59.4	66.4	507.5	6.69	8.5	7.6	7.78	15.84	6.99	0.428	4.73
14 x 10 x 74 I-T	49.25	72.2	108.0	628.4	5.90	5.8	8.7	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	69.2	98.2	588.7	5.91	6.0	8.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	66.0	90.5	543.4	5.93	6.0	8.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	64.7	77.9	504.9	5.95	6.5	7.8	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	62.1	71.1	468.9	5.95	6.6	7.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	59.5	64.1	432.8	5.94	6.8	7.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	57.0	59.5	421.0	6.05	7.4	7.1	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	51.2	57.2	387.4	6.02	7.6	6.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	44.8	54.9	350.4	5.94	7.8	6.4	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	55.5	77.3	404.7	5.26	5.2	7.3	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	53.6	70.4	377.7	5.25	5.4	7.0	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	56.8	88.2	431.8	4.99	4.9	7.6	13.81	12.15	9.06	0.872	6.26
42 T	41.99	54.6	79.8	401.4	5.02	5.0	7.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	52.9	72.2	375.3	5.05	5.2	7.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	54.6	65.4	373.0	5.26	5.7	6.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	52.4	59.3	345.0	5.26	5.8	6.6	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	50.2	53.5	318.0	5.27	5.9	6.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	48.1	50.2	309.0	5.33	6.4	6.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	41.9	47.7	277.1	5.30	6.6	5.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	36.7	45.8	250.2	5.25	6.8	5.5	5.53	11.94	6.50	0.400	2.86



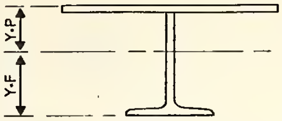
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 4 x 22 1-T	16.80	28.8	45.2	222.7	5.12	7.7	4.9	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	24.8	43.1	197.1	5.00	7.9	4.6	4.34	12.16	4.01	0.349	2.91
16.5I-T	13.11	21.0	41.0	171.4	4.81	8.2	4.2	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	18.0	39.4	151.3	4.70	8.4	3.8	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.81-T	9.34	15.1	37.8	133.0	4.60	8.8	3.5	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	45.7	62.4	289.2	4.50	4.6	6.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	44.7	58.6	277.0	4.52	4.7	6.2	10.01	10.57	8.27	0.685	4.54
31 T	31.01	43.5	53.6	260.2	4.53	4.9	6.0	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	42.7	50.3	241.7	4.45	4.8	5.7	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	40.5	43.8	216.3	4.42	4.9	5.3	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	36.9	38.4	189.8	4.36	5.1	4.9	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	33.2	39.3	190.1	4.49	5.7	4.8	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	28.8	37.6	169.8	4.44	5.9	4.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	23.8	35.6	146.3	4.30	6.1	4.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	21.6	36.3	143.1	4.30	6.6	3.9	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	18.9	34.8	128.1	4.18	6.8	3.7	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.4	33.5	113.9	4.05	6.9	3.4	3.40	10.00	4.00	0.269	2.30
11.5I-T	8.93	12.8	31.6	92.8	3.88	7.3	2.9	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	9.9	30.6	77.6	3.68	7.8	2.5	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	37.1	53.9	205.4	3.85	3.8	5.5	10.28	9.00	8.75	0.751	3.94
32 T	31.96	36.2	49.9	194.7	3.88	3.9	5.4	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	36.8	45.9	193.2	3.95	4.2	5.3	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	36.0	42.4	183.0	3.97	4.3	5.1	8.09	9.06	7.53	0.630	3.53
25 T	24.99	35.1	38.9	172.3	3.98	4.4	4.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	34.0	52.3	175.3	3.42	3.4	5.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	33.0	48.4	165.3	3.44	3.4	5.0	10.43	8.08	8.54	0.795	3.92
32 T	31.96	32.0	44.4	155.3	3.46	3.5	4.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	31.2	40.8	146.3	3.48	3.6	4.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	31.3	35.4	140.6	3.59	4.0	4.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	30.4	32.1	131.3	3.59	4.1	4.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.1	29.6	122.5	3.60	4.2	4.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	25.9	28.9	113.1	3.56	4.4	3.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	26.2	30.2	117.9	3.63	4.5	3.9	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	22.7	29.0	105.0	3.58	4.6	3.6	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.0	28.8	97.1	3.58	5.1	3.4	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.0	27.5	84.3	3.46	5.3	3.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	13.9	27.1	77.8	3.38	5.6	2.9	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	11.8	25.9	67.8	3.25	5.7	2.6	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.4	24.8	56.0	3.12	6.0	2.3	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	6.0	23.0	39.8	2.80	6.6	1.7	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	24.7	25.5	92.9	3.19	3.8	3.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	22.3	25.1	86.7	3.19	3.9	3.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.5	24.4	78.8	3.15	4.0	3.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	9.9	21.8	50.0	2.87	5.1	2.3	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.5	19.4	26.8	2.36	6.0	1.4	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.1	21.7	69.1	2.80	3.3	3.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.4	21.1	62.8	2.78	3.4	3.0	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.2	20.6	57.3	2.76	3.5	2.8	3.98	5.98	6.50	0.400	1.43



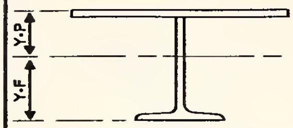
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
6 x 4 x 16 I-T	11.07	11.8	20.9	49.7	2.70	4.2	2.4	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.0	20.4	49.2	2.69	4.1	2.4	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.2	19.6	43.2	2.61	4.2	2.2	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.6	19.1	37.6	2.49	4.4	2.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.5	18.9	37.1	2.49	4.4	2.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.2	18.4	32.7	2.41	4.5	1.8	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.1	17.6	27.9	2.29	4.6	1.6	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	17.8	28.0	2.30	4.8	1.6	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4I-T	3.36	3.2	15.8	16.8	1.92	5.3	1.1	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.5	17.4	43.1	2.35	3.0	2.5	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.6	16.9	38.9	2.32	3.1	2.3	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.4	16.3	33.6	2.25	3.2	2.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.1	16.5	32.1	2.25	3.5	1.9	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	7.9	16.0	28.5	2.17	3.6	1.8	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.8	15.4	25.1	2.09	3.7	1.6	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.2	14.7	20.4	1.97	3.9	1.4	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	14.0	16.3	1.83	4.2	1.2	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.3	13.0	22.4	1.86	2.7	1.7	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.0	12.6	19.5	1.80	2.8	1.5	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	5.9	12.4	17.6	1.75	3.0	1.4	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	4.9	12.0	15.2	1.67	3.1	1.3	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	11.5	12.6	1.58	3.2	1.1	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	10.4	8.4	1.36	3.5	0.8	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	8.6	5.8	1.15	3.2	0.7	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.1	9.4	11.5	1.40	2.3	1.2	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.7	8.7	8.7	1.28	2.3	1.0	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.6	8.0	6.5	1.16	2.5	0.8	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	6.8	3.6	0.93	2.8	0.5	0.65	3.00	1.84	0.167	0.34



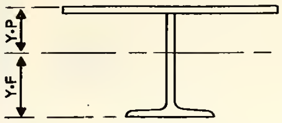
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
24 x 12 x 120 I-T	84.70	180.9	275.8	2,696.1	9.62	9.8	14.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	171.8	255.2	2,519.1	9.66	9.9	14.7	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	163.1	233.9	2,342.1	9.69	10.0	14.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	167.1	212.3	2,305.5	9.66	10.9	13.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	157.1	191.0	2,108.1	9.67	11.0	13.4	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	149.4	172.8	1,944.6	9.64	11.3	13.0	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	144.7	189.4	1,764.8	8.43	9.3	12.2	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	132.5	163.8	1,555.5	8.44	9.5	11.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	129.4	149.3	1,498.8	8.64	10.0	11.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	125.2	139.9	1,420.0	8.64	10.2	11.3	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	119.9	127.8	1,321.1	8.63	10.3	11.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	116.5	191.3	1,324.8	7.10	6.9	11.4	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	127.2	204.4	1,478.3	7.40	7.2	11.6	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	121.3	189.5	1,382.8	7.41	7.3	11.4	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	115.6	174.5	1,288.9	7.43	7.4	11.1	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	115.7	151.5	1,226.3	7.47	8.1	10.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	109.8	138.9	1,136.4	7.49	8.2	10.4	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	104.7	126.9	1,054.1	7.49	8.3	10.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	100.5	117.0	985.9	7.50	8.4	9.8	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	101.8	109.5	982.0	7.58	9.0	9.6	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	97.9	100.7	918.1	7.56	9.1	9.4	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	92.1	94.1	855.4	7.56	9.3	9.1	10.76	18.00	7.50	0.570	6.44
16 x 11 1/2 x 96 I-T	64.24	102.1	157.5	1,034.3	6.69	6.6	10.1	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	97.8	144.8	965.4	6.69	6.7	9.9	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	98.3	125.5	920.2	6.72	7.3	9.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	93.7	115.0	853.5	6.72	7.4	9.1	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	89.2	104.5	787.8	6.72	7.5	8.8	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	85.5	95.3	731.5	6.72	7.7	8.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	83.7	84.6	699.1	6.86	8.4	8.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	75.9	81.1	646.7	6.84	8.5	8.0	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	68.2	77.8	595.4	6.84	8.7	7.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	60.6	75.0	543.7	6.73	9.0	7.2	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	86.9	129.6	799.7	6.13	6.2	9.2	17.07	15.00	10.50	0.850	8.46
54 T	53.99	84.8	119.3	757.8	6.14	6.4	8.9	15.88	14.91	10.48	0.760	8.17
14 x 12 x 78 I-T	50.45	78.8	117.6	681.3	5.98	5.8	8.6	14.84	14.06	12.00	0.718	6.01
14 x 10 x 74 I-T	49.25	80.3	110.4	676.5	6.01	6.1	8.4	14.49	14.18	10.07	0.783	6.38
68 I-T	45.24	77.2	100.4	634.5	6.02	6.3	8.2	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	73.9	92.4	586.2	6.03	6.3	7.9	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	72.5	79.6	543.1	6.03	6.8	7.5	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	69.9	72.5	504.5	6.02	7.0	7.2	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	65.3	67.2	465.7	6.00	7.1	6.9	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	58.1	67.3	452.0	6.09	7.8	6.7	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	52.2	64.9	415.6	6.05	8.0	6.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	45.7	62.4	375.4	5.95	8.2	6.0	6.38	13.86	6.73	0.383	3.74
12 x 12 x 50 T	50.01	62.7	102.7	481.9	5.05	4.7	7.7	14.71	12.00	12.00	0.775	5.61
12 x 10 x 58 I-T	37.58	62.6	78.9	438.0	5.36	5.6	7.0	11.05	12.18	10.01	0.641	4.37
12 x 9 x 47 T	46.95	63.7	90.5	468.3	5.10	5.2	7.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	61.4	81.7	435.4	5.13	5.3	7.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	59.6	73.9	406.9	5.14	5.5	6.8	11.18	11.95	8.98	0.682	5.26

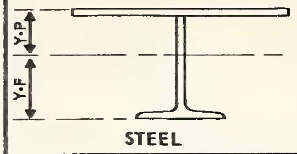


PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 10 x 53 I-T	34.55	60.5	71.9	408.6	5.33	5.7	6.7	10.16	12.06	10.00	0.576	4.16
12 x 8 x 50 I-T	33.81	61.5	66.8	402.0	5.33	6.0	6.5	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	59.1	60.5	371.9	5.32	6.1	6.3	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	54.5	56.9	342.8	5.32	6.3	6.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	49.1	56.9	332.4	5.36	6.8	5.8	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	42.6	54.4	297.7	5.32	7.0	5.5	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	37.3	52.4	268.3	5.25	7.2	5.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	29.4	51.6	237.2	5.09	8.1	4.6	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	25.3	49.3	209.6	4.95	8.3	4.2	4.34	12.16	4.01	0.349	2.91
16.51-T	13.11	21.4	46.9	181.7	4.74	8.5	3.9	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	18.3	45.3	159.9	4.61	8.7	3.5	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8I-T	9.34	15.3	43.5	140.2	4.49	9.2	3.2	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	51.7	63.9	314.2	4.58	4.9	6.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	50.7	60.0	300.8	4.60	5.0	5.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	49.4	54.9	282.4	4.60	5.1	5.7	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	48.4	51.4	261.5	4.51	5.1	5.4	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	44.6	46.1	233.8	4.46	5.2	5.1	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	37.6	43.8	204.7	4.38	5.4	4.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	33.8	44.9	204.3	4.50	6.0	4.5	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	29.3	43.1	182.1	4.43	6.2	4.2	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.2	40.9	156.3	4.27	6.5	3.8	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	21.9	41.6	152.4	4.26	6.9	3.7	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.2	40.0	136.1	4.13	7.1	3.4	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	16.7	38.4	120.7	3.98	7.2	3.1	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	13.0	36.4	97.8	3.78	7.5	2.7	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	10.1	35.2	81.3	3.57	8.1	2.3	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	42.2	55.2	224.4	3.93	4.1	5.3	10.28	9.00	8.75	0.751	3.94
32 T	31.96	41.3	51.1	212.7	3.95	4.2	5.2	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	41.9	46.9	210.2	4.02	4.5	5.0	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	41.0	43.3	198.9	4.02	4.6	4.8	8.09	9.06	7.53	0.630	3.53
25 T	24.99	39.7	40.1	187.1	4.02	4.7	4.7	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	38.6	53.7	191.8	3.50	3.6	5.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	37.6	49.7	180.8	3.51	3.6	4.8	10.43	8.08	8.54	0.795	3.92
32 T	31.96	36.5	45.5	169.8	3.53	3.7	4.6	9.40	8.00	8.50	0.715	3.54
29 T	28.97	35.7	41.8	159.8	3.54	3.8	4.5	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	35.8	36.1	153.0	3.64	4.2	4.3	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	32.8	34.9	142.6	3.63	4.4	4.1	6.62	8.06	7.04	0.563	2.78
20 T	19.99	29.7	34.1	132.8	3.63	4.5	3.9	5.88	8.00	7.00	0.503	2.45
18 T	18.36	26.4	33.2	122.3	3.57	4.6	3.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	26.7	34.6	127.0	3.63	4.8	3.7	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	23.0	33.3	112.9	3.57	4.9	3.4	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.3	33.1	103.8	3.55	5.4	3.1	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.2	31.6	89.8	3.42	5.5	2.8	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.1	31.2	82.5	3.32	5.8	2.6	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.0	29.8	71.7	3.18	6.0	2.4	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.5	28.6	58.9	3.03	6.2	2.1	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5I-T	5.19	6.1	26.4	41.4	2.69	6.8	1.6	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	25.2	29.4	100.9	3.21	4.0	3.4	5.59	7.06	6.78	0.513	2.20

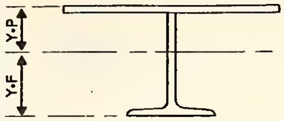


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 6 3/4 x 17 T	17.00	22.7	28.9	93.9	3.19	4.1	3.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	19.8	28.2	84.9	3.14	4.3	3.0	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.0	25.2	52.9	2.80	5.3	2.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.5	22.2	27.8	2.25	6.1	1.3	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	21.5	25.1	75.1	2.81	3.5	3.0	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	18.8	24.4	68.0	2.78	3.6	2.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.4	23.8	61.8	2.75	3.8	2.6	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	12.0	24.0	52.9	2.66	4.4	2.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.2	23.5	52.5	2.65	4.3	2.2	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.4	22.7	45.9	2.56	4.4	2.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.7	21.9	39.8	2.43	4.6	1.8	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.6	21.8	39.3	2.43	4.6	1.8	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.3	21.1	34.5	2.34	4.7	1.6	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	6.2	20.3	29.3	2.21	4.7	1.4	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	5.9	20.4	29.3	2.22	4.9	1.4	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.2	18.0	17.4	1.83	5.4	1.0	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	14.8	20.1	46.7	2.35	3.2	2.3	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	12.8	19.5	41.9	2.31	3.3	2.1	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.6	18.8	36.1	2.22	3.4	1.9	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.2	19.0	34.2	2.21	3.7	1.8	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.0	18.4	30.3	2.12	3.8	1.6	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	6.9	17.8	26.6	2.04	3.9	1.5	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.3	16.9	21.4	1.90	4.0	1.3	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	3.9	16.0	17.0	1.75	4.3	1.1	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.4	15.1	24.1	1.83	2.8	1.6	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.1	14.5	20.8	1.76	2.9	1.4	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.0	14.3	18.7	1.70	3.1	1.3	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.0	13.7	16.1	1.62	3.2	1.2	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.0	13.1	13.3	1.53	3.3	1.0	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.4	11.7	8.7	1.30	3.6	0.7	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.8	9.6	6.0	1.09	3.3	0.6	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.2	10.8	12.3	1.37	2.4	1.1	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.8	9.9	9.3	1.24	2.4	0.9	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	9.1	6.8	1.12	2.5	0.8	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	7.5	3.7	0.88	2.9	0.5	0.65	3.00	1.84	0.167	0.34



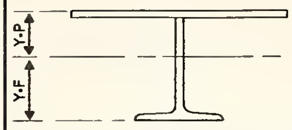
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x 12 x 120 I-T	84.70	212.2	286.9	3,017.1	9.92	10.5	14.2	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	202.9	265.5	2,828.8	9.95	10.7	13.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	194.0	243.3	2,637.8	9.98	10.8	13.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	197.5	221.0	2,577.9	9.91	11.7	13.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	187.2	198.9	2,364.3	9.90	11.9	12.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	179.1	179.9	2,184.6	9.86	12.1	12.2	16.71	23.90	8.98	0.682	10.52
21 x 9 x 96 I-T	70.15	171.1	197.3	1,977.6	8.66	10.0	11.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	158.7	170.6	1,750.9	8.66	10.3	11.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	155.5	155.9	1,687.8	8.83	10.9	10.8	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	145.6	151.5	1,600.6	8.82	11.0	10.6	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	133.0	146.0	1,490.6	8.79	11.2	10.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	139.7	200.0	1,510.2	7.37	7.5	10.8	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	151.2	212.9	1,672.3	7.66	7.9	11.1	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	145.1	197.3	1,568.6	7.66	7.9	10.8	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	139.3	181.6	1,465.8	7.67	8.1	10.5	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	138.9	157.8	1,385.6	7.68	8.8	10.0	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	132.8	144.6	1,287.4	7.69	8.9	9.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	127.6	132.0	1,196.1	7.67	9.1	9.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	121.6	123.2	1,119.9	7.67	9.2	9.1	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	113.9	124.6	1,111.3	7.72	9.8	8.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	104.6	120.5	1,039.5	7.69	9.9	8.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	95.7	116.6	968.7	7.66	10.1	8.3	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	125.6	179.9	1,264.8	6.91	7.0	10.1	20.76	16.66	11.53	0.960	10.07
65 T	65.04	122.4	164.9	1,193.1	6.92	7.2	9.8	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	123.4	164.0	1,180.0	6.92	7.2	9.6	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	118.9	150.8	1,103.1	6.91	7.3	9.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	118.9	130.7	1,043.6	6.90	8.0	8.8	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	114.1	119.7	969.7	6.89	8.1	8.5	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	108.6	109.5	896.3	6.87	8.3	8.2	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	99.0	105.6	832.6	6.85	8.4	7.9	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	86.9	104.9	792.6	6.95	9.1	7.6	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	78.7	101.2	733.0	6.91	9.3	7.2	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	70.7	97.8	674.2	6.88	9.5	6.9	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	62.8	94.5	613.9	6.73	9.8	6.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	106.2	135.5	919.4	6.35	6.8	8.7	17.07	15.00	10.50	0.850	8.46
54 T	53.99	104.0	124.6	869.9	6.34	7.0	8.4	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	95.5	104.4	728.2	6.18	7.0	7.6	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	92.0	95.7	672.9	6.17	7.0	7.3	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	82.4	90.3	619.8	6.13	7.5	6.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	75.0	87.5	575.2	6.10	7.7	6.6	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	67.5	84.7	530.3	6.06	7.9	6.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	60.1	84.9	512.3	6.11	8.5	6.0	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	53.9	82.2	470.0	6.04	8.7	5.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	47.1	79.4	422.9	5.90	9.0	5.3	6.38	13.86	6.73	0.383	3.74
12 x 10 x 58 I-T	37.58	78.5	81.6	505.1	5.48	6.2	6.4	11.05	12.18	10.01	0.641	4.37
53 I-T	34.55	74.3	76.3	470.6	5.44	6.3	6.2	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	79.4	94.5	543.3	5.27	5.7	6.8	13.81	12.15	9.06	0.872	6.26
42 T	41.99	77.0	85.2	504.7	5.28	5.9	6.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	75.0	76.9	470.6	5.27	6.1	6.3	11.18	11.95	8.98	0.682	5.26



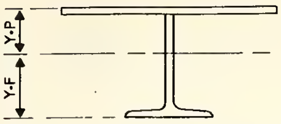
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 8 x 50 I-T	33.81	69.2	77.1	460.0	5.41	6.7	6.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	62.6	74.6	425.2	5.38	6.8	5.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	56.2	72.2	391.1	5.35	7.0	5.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	50.7	72.2	377.5	5.37	7.5	5.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	43.9	69.5	336.8	5.29	7.7	4.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	38.4	67.2	302.3	5.18	7.9	4.5	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	30.3	65.9	264.2	4.97	8.7	4.0	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	26.0	63.2	232.4	4.80	8.9	3.7	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	22.0	60.2	200.4	4.57	9.1	3.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	18.8	58.3	175.3	4.40	9.3	3.0	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	15.7	56.3	152.7	4.24	9.7	2.7	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	65.3	66.6	364.5	4.70	5.5	5.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	62.4	64.2	348.5	4.70	5.6	5.4	10.01	10.57	8.27	0.685	4.54
31 T	31.01	56.9	62.8	326.4	4.68	5.7	5.2	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	53.1	61.4	300.6	4.57	5.7	4.9	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	46.0	58.8	267.8	4.49	5.8	4.6	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	38.7	56.1	233.1	4.37	6.0	4.2	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	34.8	57.5	231.0	4.46	6.6	4.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	30.1	55.4	205.0	4.35	6.8	3.7	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	24.9	52.7	174.7	4.16	7.0	3.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	22.5	53.3	169.2	4.13	7.5	3.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	19.7	51.3	150.5	3.97	7.6	2.9	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.1	49.4	132.8	3.81	7.7	2.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.3	46.8	106.4	3.56	8.0	2.3	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.3	45.1	87.5	3.32	8.5	1.9	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	53.9	57.5	262.6	4.05	4.6	4.9	10.28	9.00	8.75	0.751	3.94
32 T	31.96	52.8	53.1	248.4	4.05	4.7	4.7	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	48.8	53.5	243.9	4.09	5.0	4.6	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	45.0	52.5	230.1	4.08	5.1	4.4	8.09	9.06	7.53	0.630	3.53
25 T	24.99	41.1	51.5	215.7	4.06	5.2	4.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	49.1	56.3	225.4	3.62	4.0	4.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	47.9	51.9	212.2	3.62	4.1	4.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	46.8	47.4	198.7	3.62	4.2	4.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	43.4	45.8	186.5	3.61	4.3	4.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	37.4	46.1	176.9	3.67	4.7	3.8	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	33.9	45.1	164.3	3.64	4.9	3.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	30.6	44.1	152.4	3.62	5.0	3.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.2	43.0	139.6	3.54	5.1	3.2	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	27.4	44.6	144.2	3.59	5.3	3.2	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	23.6	43.0	127.3	3.50	5.4	3.0	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	19.8	42.7	116.0	3.44	5.9	2.7	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	16.6	40.8	99.6	3.29	6.0	2.4	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	14.5	40.1	91.0	3.18	6.3	2.3	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.3	38.3	78.6	3.02	6.4	2.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	9.7	36.7	63.8	2.83	6.6	1.7	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.2	33.6	44.2	2.46	7.1	1.3	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	26.0	38.2	115.9	3.20	4.5	3.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	23.4	37.5	107.2	3.16	4.6	2.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.3	36.6	96.2	3.08	4.7	2.6	4.41	6.93	6.73	0.383	1.87

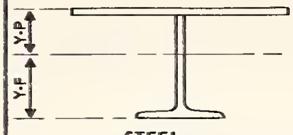


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 4 x 8.6 T	8.60	10.3	32.5	58.1	2.65	5.6	1.8	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.6	27.9	29.5	2.05	6.4	1.1	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.1	32.6	86.5	2.80	3.9	2.7	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.3	31.7	77.7	2.74	4.0	2.4	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	16.8	31.0	70.1	2.68	4.2	2.3	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.3	30.9	58.7	2.55	4.8	1.9	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.5	30.3	58.5	2.55	4.7	1.9	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.6	29.2	50.7	2.43	4.8	1.7	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	8.9	28.1	43.6	2.30	4.9	1.6	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	8.8	27.9	43.1	2.29	4.9	1.5	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.5	27.0	37.5	2.19	5.0	1.4	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.3	25.8	31.6	2.05	5.0	1.2	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.1	26.0	31.6	2.06	5.2	1.2	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.3	22.2	18.4	1.65	5.6	0.8	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.2	26.1	53.4	2.31	3.5	2.0	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.2	25.4	47.5	2.24	3.6	1.9	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	10.8	24.4	40.4	2.14	3.7	1.7	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.5	24.5	38.0	2.11	4.0	1.6	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.2	23.6	33.4	2.01	4.1	1.4	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.0	22.7	29.1	1.91	4.2	1.3	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.4	21.4	23.2	1.77	4.3	1.1	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.0	20.0	18.2	1.60	4.5	0.9	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.7	19.5	27.0	1.76	3.1	1.4	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.3	18.7	23.2	1.68	3.2	1.2	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.1	18.2	20.6	1.61	3.4	1.1	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.1	17.3	17.6	1.51	3.4	1.0	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.1	16.4	14.4	1.41	3.5	0.9	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	14.2	9.3	1.18	3.8	0.7	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	11.5	6.4	0.98	3.4	0.6	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.4	13.8	13.8	1.30	2.6	1.0	2.36	3.13	4.03	0.404	0.81
6 T	6.02	3.9	12.4	10.2	1.16	2.6	0.8	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.7	11.1	7.4	1.03	2.7	0.7	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.3	8.6	4.0	0.79	3.0	0.5	0.65	3.00	1.84	0.167	0.34

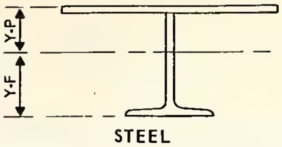


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
24 x14 x130 I-T	89.83	250.5	323.4	3,492.4	10.15	10.8	13.9	26.42	24.24	14.00	0.900	13.70
24 x12 x120 I-T	84.70	247.5	296.8	3,347.2	10.16	11.3	13.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	238.1	274.6	3,144.8	10.19	11.5	13.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	229.0	251.5	2,936.8	10.20	11.7	12.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	228.7	231.9	2,853.2	10.10	12.5	12.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	205.7	221.3	2,620.5	10.07	12.7	11.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	186.1	212.7	2,422.3	10.00	13.0	11.4	16.71	23.90	8.98	0.682	10.52
21 x13 x112 I-T	76.27	203.0	248.6	2,402.6	8.96	9.7	11.8	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	201.1	204.3	2,193.1	8.83	10.7	10.9	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	176.5	188.3	1,945.6	8.80	11.0	10.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	160.8	185.9	1,874.2	8.96	11.7	10.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	150.5	181.2	1,777.4	8.92	11.8	9.8	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	137.3	175.5	1,654.7	8.87	12.0	9.4	13.54	20.98	8.24	0.615	8.39
18 x12 x 75 T	75.07	166.0	207.7	1,699.1	7.58	8.2	10.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	178.3	220.4	1,870.7	7.86	8.5	10.5	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	172.1	204.1	1,757.0	7.86	8.6	10.2	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	166.0	187.7	1,643.7	7.85	8.8	9.9	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	163.2	165.1	1,544.6	7.82	9.5	9.4	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	149.3	158.9	1,436.6	7.82	9.6	9.0	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	136.3	153.4	1,335.0	7.78	9.8	8.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	125.4	148.9	1,249.5	7.75	10.0	8.4	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	117.5	150.3	1,235.9	7.79	10.5	8.2	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	107.9	145.9	1,155.3	7.73	10.7	7.9	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	98.5	141.8	1,075.6	7.67	10.9	7.6	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	150.1	186.8	1,428.0	7.11	7.6	9.5	20.76	16.66	11.53	0.960	10.07
65 T	65.04	146.6	171.0	1,345.6	7.11	7.9	9.2	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	147.4	169.6	1,326.5	7.09	7.8	9.0	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	142.6	155.8	1,240.4	7.06	8.0	8.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	135.2	142.2	1,165.8	7.02	8.6	8.2	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	123.7	137.2	1,083.6	6.99	8.8	7.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	112.1	132.3	1,001.3	6.95	8.9	7.6	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	102.0	128.2	929.4	6.90	9.1	7.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	89.5	127.6	880.8	6.97	9.8	6.9	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	80.9	123.7	813.3	6.90	10.0	6.6	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	72.6	120.1	746.4	6.83	10.3	6.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	64.4	116.3	677.5	6.66	10.5	5.8	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	128.1	140.5	1,038.5	6.50	7.4	8.1	17.07	15.00	10.50	0.850	8.46
54 T	53.99	125.6	129.0	980.7	6.48	7.6	7.8	15.88	14.91	10.48	0.760	8.17
14 x10 x 68 I-T	45.24	107.7	116.2	819.1	6.27	7.6	7.1	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	98.5	112.4	755.8	6.24	7.7	6.7	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	84.8	110.3	692.3	6.16	8.2	6.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	77.0	107.3	641.2	6.11	8.3	6.0	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	69.2	104.2	589.8	6.03	8.5	5.7	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	61.7	104.5	567.2	6.06	9.2	5.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	55.2	101.6	518.8	5.95	9.4	5.1	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	48.3	98.3	464.8	5.79	9.6	4.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	97.1	97.8	616.4	5.38	6.3	6.3	13.81	12.15	9.06	0.872	6.26
42 T	41.99	88.0	94.5	571.4	5.37	6.5	6.0	12.35	12.04	9.01	0.772	5.65

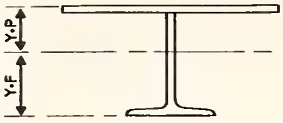


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
12 x 9 x 38 T	38.01	79.4	92.3	531.2	5.33	6.7	5.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	71.1	94.6	514.4	5.43	7.2	5.4	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	64.2	91.8	474.4	5.37	7.4	5.2	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	57.5	89.3	435.2	5.31	7.6	4.9	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	51.9	89.3	418.3	5.31	8.1	4.7	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	44.9	86.2	371.5	5.19	8.3	4.3	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	39.2	83.6	331.8	5.05	8.5	4.0	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	31.0	81.6	287.4	4.81	9.3	3.5	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	26.6	78.4	251.6	4.61	9.5	3.2	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	22.5	74.7	216.0	4.36	9.6	2.9	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	19.2	72.3	187.8	4.17	9.8	2.6	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 1-T	9.34	16.0	69.9	162.8	3.99	10.2	2.3	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	68.7	80.6	412.3	4.76	6.0	5.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	64.3	79.4	393.4	4.74	6.1	5.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	58.6	77.8	367.2	4.70	6.3	4.7	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	54.5	75.8	336.7	4.56	6.2	4.4	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	47.1	72.9	298.7	4.46	6.3	4.1	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	39.5	69.7	258.4	4.30	6.5	3.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	35.6	71.3	254.6	4.36	7.2	3.6	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	30.7	68.9	224.7	4.23	7.3	3.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	25.4	65.6	190.2	4.01	7.5	2.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	23.0	66.1	183.4	3.96	8.0	2.8	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	20.1	63.7	162.4	3.80	8.1	2.6	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	17.5	61.1	142.7	3.62	8.2	2.3	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.5	57.9	113.4	3.35	8.4	2.0	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 1-T	7.38	10.5	55.5	92.5	3.09	8.8	1.7	2.17	10.00	2.69	0.188	1.55
9 x 8 3/4 x 35 T	34.95	59.3	66.9	298.7	4.10	5.0	4.5	10.28	9.00	8.75	0.751	3.94
32 T	31.96	54.7	65.7	281.8	4.08	5.2	4.3	9.40	8.94	8.71	0.686	3.60
9 x 7 1/2 x 30 T	29.99	50.2	66.4	275.1	4.11	5.5	4.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	46.2	65.3	258.7	4.07	5.6	4.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	42.2	64.1	241.7	4.03	5.7	3.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	58.3	60.8	257.6	3.69	4.4	4.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	53.6	59.5	241.9	3.67	4.5	4.1	10.43	8.08	8.54	0.795	3.92
32 T	31.96	48.8	58.2	225.8	3.66	4.6	3.9	9.40	8.00	8.50	0.715	3.54
29 T	28.97	44.6	57.2	211.2	3.63	4.7	3.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	38.5	57.4	198.7	3.66	5.2	3.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	34.7	56.2	183.8	3.61	5.3	3.3	6.62	8.06	7.04	0.563	2.78
20 T	19.99	31.3	55.2	169.6	3.56	5.4	3.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	27.9	53.7	154.7	3.46	5.6	2.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	28.0	55.4	159.3	3.51	5.7	2.9	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	24.0	53.5	139.7	3.39	5.8	2.6	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	20.2	53.0	126.3	3.31	6.3	2.4	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	16.9	50.6	107.8	3.13	6.4	2.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	14.8	49.5	98.1	3.02	6.6	2.0	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	12.5	47.2	84.3	2.85	6.7	1.8	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	9.8	45.1	67.7	2.64	6.9	1.5	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.3	40.7	46.4	2.27	7.4	1.1	1.53	8.00	2.28	0.188	1.08
7 x 6 3/4 x 19 T	19.01	26.6	47.7	129.1	3.14	4.9	2.7	5.59	7.06	6.78	0.513	2.20



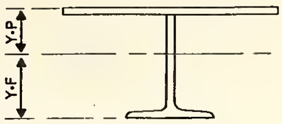
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 17 T	17.00	23.9	46.9	118.7	3.08	5.0	2.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	20.7	45.7	105.9	2.98	5.1	2.3	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.5	40.1	62.4	2.49	5.9	1.6	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.51-T	4.27	4.7	33.3	30.9	1.88	6.6	0.9	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	22.7	40.8	96.5	2.75	4.3	2.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	19.7	39.7	86.1	2.67	4.4	2.2	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.2	38.7	77.1	2.59	4.5	2.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	12.5	38.1	63.6	2.43	5.1	1.7	3.26	6.24	4.03	0.404	1.62
11 T	11.02	12.8	37.6	63.6	2.43	5.0	1.7	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	10.8	36.0	54.7	2.30	5.1	1.5	2.81	6.08	4.01	0.349	1.46
12 1-T	8.47	9.1	34.4	46.7	2.16	5.1	1.4	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.0	34.2	46.2	2.16	5.2	1.3	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.6	33.0	40.0	2.04	5.2	1.2	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.4	31.2	33.5	1.90	5.2	1.1	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.2	31.4	33.5	1.91	5.4	1.1	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.41-T	3.36	3.3	26.1	19.2	1.50	5.8	0.7	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.6	32.6	59.1	2.24	3.8	1.8	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.4	31.6	52.2	2.16	3.9	1.7	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.0	30.2	44.1	2.04	4.0	1.5	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.6	30.1	41.1	2.00	4.3	1.4	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.3	28.9	36.0	1.90	4.3	1.2	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.1	27.6	31.2	1.79	4.4	1.1	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.5	25.8	24.6	1.64	4.5	1.0	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.1	23.7	19.1	1.47	4.7	0.8	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	8.9	24.0	29.5	1.68	3.3	1.2	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.4	22.8	25.2	1.59	3.4	1.1	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.3	22.1	22.2	1.51	3.6	1.0	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.2	20.9	18.8	1.41	3.6	0.9	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.2	19.5	15.3	1.30	3.7	0.8	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.5	16.3	9.8	1.07	3.9	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	1.9	12.9	6.7	0.90	3.5	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.5	16.7	15.0	1.23	2.7	0.9	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.0	14.8	11.0	1.09	2.8	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.8	12.9	7.9	0.95	2.8	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.4	9.5	4.2	0.72	3.1	0.4	0.65	3.00	1.84	0.167	0.34

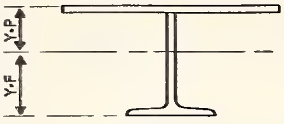


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
27 x 14 x 145 I-T	102.05	340.1	401.2	5,051.2	11.31	12.6	14.9	30.01	26.88	13.96	0.975	16.12
27 x 10 114 I-T	85.05	311.7	325.5	4,433.4	11.33	14.2	13.6	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	280.9	311.3	4,078.9	11.30	14.5	13.1	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	258.8	301.6	3,825.3	11.24	14.8	12.7	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	291.4	333.2	3,855.4	10.36	11.6	13.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	288.0	305.8	3,687.7	10.35	12.1	12.8	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	278.4	282.7	3,468.1	10.36	12.3	12.5	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	258.8	269.1	3,240.2	10.35	12.5	12.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	235.7	271.1	3,132.2	10.22	13.3	11.6	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	211.8	260.2	2,877.3	10.16	13.6	11.1	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	191.6	251.2	2,658.4	10.07	13.9	10.6	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	238.5	255.9	2,661.7	9.13	10.4	11.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	210.6	235.3	2,411.9	8.95	11.5	10.2	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	181.6	222.0	2,140.3	8.88	11.8	9.6	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	165.4	220.0	2,058.4	9.01	12.4	9.4	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	154.7	215.1	1,950.9	8.95	12.6	9.1	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	141.1	209.0	1,814.3	8.87	12.9	8.7	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	196.0	214.4	1,892.3	7.74	8.8	9.7	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	209.3	227.1	2,074.0	8.02	9.1	9.9	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	202.8	210.1	1,948.8	8.00	9.3	9.6	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	193.1	196.4	1,823.2	7.98	9.4	9.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	167.9	195.0	1,703.9	7.91	10.1	8.7	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	153.5	188.6	1,584.5	7.88	10.3	8.4	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	139.9	182.8	1,471.2	7.82	10.5	8.0	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	128.6	178.0	1,375.4	7.77	10.7	7.7	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	120.6	179.5	1,356.5	7.79	11.2	7.6	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	110.7	174.8	1,266.4	7.70	11.4	7.2	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	101.0	170.4	1,176.9	7.62	11.7	6.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	178.1	192.7	1,594.1	7.26	8.3	9.0	20.76	16.66	11.53	0.960	10.07
65 T	65.04	174.2	176.3	1,499.5	7.24	8.5	8.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	174.5	174.8	1,474.3	7.20	8.4	8.4	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	160.1	169.7	1,377.7	7.16	8.6	8.1	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	139.1	168.8	1,287.1	7.08	9.3	7.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	127.1	163.5	1,195.5	7.03	9.4	7.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	115.0	158.3	1,103.4	6.97	9.6	7.0	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	104.6	153.8	1,022.5	6.90	9.8	6.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	91.7	153.4	964.5	6.92	10.5	6.3	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	82.8	149.2	888.6	6.82	10.7	6.0	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	74.2	145.3	813.2	6.72	11.0	5.6	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	65.8	140.8	735.7	6.52	11.2	5.2	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	144.7	153.0	1,157.5	6.60	8.0	7.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	132.8	150.2	1,090.6	6.55	8.2	7.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	110.4	139.6	907.6	6.31	8.2	6.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	100.7	135.5	835.7	6.24	8.3	6.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	86.7	133.0	761.2	6.13	8.8	5.7	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	78.7	129.7	703.3	6.05	8.9	5.4	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	70.6	126.2	645.0	5.95	9.1	5.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	63.0	126.6	617.7	5.95	9.8	4.9	7.96	14.12	6.78	0.513	4.41

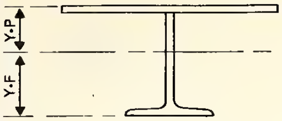


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 6 3/4 x 34 I-T	24.30	56.3	123.3	563.1	5.81	10.0	4.6	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	49.2	119.4	502.5	5.62	10.2	4.2	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	100.6	117.2	688.1	5.43	6.8	5.9	13.81	12.15	9.06	0.872	6.26
42 T	41.99	90.4	114.3	635.9	5.39	7.0	5.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	81.4	111.8	589.2	5.34	7.2	5.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	72.6	114.2	565.8	5.39	7.8	5.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	65.5	111.2	520.4	5.31	7.9	4.7	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	58.6	108.4	475.7	5.23	8.1	4.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	52.9	108.4	455.4	5.20	8.6	4.2	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	45.7	104.9	402.5	5.05	8.8	3.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	39.8	101.8	357.9	4.88	9.0	3.5	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	31.5	98.9	307.7	4.61	9.8	3.1	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.1	95.1	268.2	4.40	9.9	2.8	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	22.9	90.5	229.3	4.14	10.0	2.5	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.5	87.4	198.4	3.94	10.2	2.3	3.30	11.90	3.97	0.224	2.38
12 x 3 x 11.8 I-T	9.34	16.2	84.4	171.1	3.74	10.5	2.0	2.75	12.00	3.06	0.250	2.10
10 1/2 x 8 1/4 x 36.5 T	36.48	70.4	97.8	457.8	4.76	6.5	4.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	65.9	96.5	435.9	4.73	6.6	4.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	59.9	94.6	405.5	4.67	6.8	4.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	55.6	92.0	370.4	4.51	6.7	4.0	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.0	88.6	327.1	4.38	6.8	3.7	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.2	84.8	281.2	4.20	7.0	3.3	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.2	86.7	275.6	4.23	7.6	3.2	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.2	83.8	242.0	4.08	7.8	2.9	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	25.8	79.6	203.7	3.83	7.9	2.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.4	80.0	195.7	3.78	8.4	2.4	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.5	77.0	172.7	3.61	8.4	2.2	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	17.8	73.8	151.3	3.42	8.5	2.1	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.7	69.6	119.2	3.13	8.7	1.7	2.63	9.86	3.95	0.204	1.77
10 x 2 3/4 x 9 I-T	7.38	10.6	66.1	96.6	2.88	9.1	1.5	2.17	10.00	2.69	0.188	1.55
9 x 7 1/2 x 30 T	29.99	51.4	80.9	304.3	4.07	5.9	3.8	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	47.2	79.6	285.3	4.03	6.0	3.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.1	78.2	265.6	3.97	6.2	3.4	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	59.9	73.9	288.8	3.71	4.8	3.9	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	55.0	72.5	270.3	3.68	4.9	3.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	50.0	71.1	251.4	3.65	5.0	3.5	9.40	8.00	8.50	0.715	3.54
29 T	28.97	45.6	69.8	234.4	3.61	5.1	3.4	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	39.3	70.0	218.7	3.60	5.6	3.1	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	35.4	68.6	201.5	3.53	5.7	2.9	6.62	8.06	7.04	0.563	2.78
20 T	19.99	31.9	67.3	185.1	3.47	5.8	2.8	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.4	65.5	168.1	3.36	5.9	2.6	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.5	67.4	172.7	3.40	6.1	2.6	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.4	65.0	150.6	3.26	6.2	2.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.5	64.2	135.3	3.16	6.6	2.1	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.2	61.1	114.9	2.97	6.7	1.9	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.0	59.6	104.1	2.85	6.9	1.7	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.7	56.6	89.1	2.68	7.0	1.6	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.0	53.7	71.1	2.46	7.1	1.3	2.19	7.90	3.94	0.204	1.34
8 x 2 1/4 x 6.5 I-T	5.19	6.4	47.6	48.2	2.09	7.5	1.0	1.53	8.00	2.28	0.188	1.08



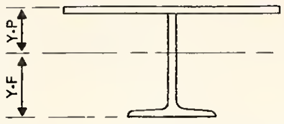
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	27.1	58.2	141.0	3.06	5.2	2.4	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.3	57.2	129.0	2.98	5.3	2.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.1	55.5	114.5	2.87	5.4	2.1	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.7	48.0	65.9	2.34	6.2	1.4	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.8	38.4	32.0	1.73	6.7	0.8	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.1	49.7	105.4	2.67	4.6	2.1	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.0	48.3	93.5	2.58	4.7	1.9	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.4	47.0	83.2	2.48	4.8	1.8	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.7	45.7	67.8	2.30	5.3	1.5	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.0	45.1	67.9	2.31	5.2	1.5	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.0	43.0	58.2	2.17	5.3	1.4	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.2	40.8	49.4	2.03	5.4	1.2	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.1	40.6	48.8	2.02	5.4	1.2	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.7	38.9	42.1	1.91	5.4	1.1	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.5	36.4	35.2	1.77	5.4	1.0	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.3	36.7	35.1	1.77	5.6	1.0	1.72	6.00	3.06	0.175	1.05
6 x 1 7/8 x 4.4 I-T	3.36	3.4	29.4	19.9	1.38	5.9	0.7	0.99	6.00	1.84	0.188	0.68
5 x 5 3/4 x 14.5 T	14.52	15.9	39.4	64.2	2.16	4.0	1.6	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.7	38.1	56.4	2.07	4.1	1.5	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.2	36.1	47.2	1.94	4.2	1.3	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	9.8	35.9	43.9	1.89	4.5	1.2	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.5	34.3	38.2	1.79	4.5	1.1	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.3	32.5	33.0	1.68	4.5	1.0	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.6	29.9	25.9	1.52	4.6	0.9	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.2	27.1	20.0	1.36	4.8	0.7	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.0	28.5	31.8	1.60	3.5	1.1	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.5	27.0	26.9	1.50	3.6	1.0	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.4	25.9	23.6	1.42	3.7	0.9	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.3	24.2	20.0	1.32	3.7	0.8	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.2	22.3	16.1	1.21	3.8	0.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.6	18.1	10.2	0.99	4.0	0.6	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.0	14.1	7.0	0.83	3.6	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.6	19.5	16.1	1.17	2.9	0.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.1	17.0	11.7	1.02	2.9	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	2.9	14.5	8.4	0.88	2.9	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.4	10.2	4.5	0.66	3.1	0.4	0.65	3.00	1.84	0.167	0.34



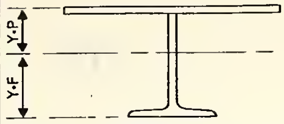
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
30 x 10 1/2 x 132 I-T	99.55	400.1	437.7	6,464.0	12.56	16.2	14.8	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	376.3	426.5	6,154.9	12.52	16.4	14.4	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	351.4	415.4	5,829.3	12.44	16.6	14.0	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	324.5	403.7	5,476.9	12.32	16.9	13.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	389.5	411.8	5,505.9	11.49	13.4	14.1	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	320.0	374.0	4,812.3	11.45	15.0	12.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	288.2	359.3	4,427.6	11.39	15.4	12.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	265.4	349.1	4,150.7	11.31	15.6	11.9	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	336.2	341.7	4,213.7	10.51	12.3	12.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	313.6	332.4	4,022.0	10.48	12.8	12.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	289.7	322.6	3,783.2	10.47	13.1	11.7	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	265.0	312.9	3,533.3	10.44	13.3	11.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	241.7	314.1	3,401.6	10.28	14.1	10.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	217.0	302.7	3,122.7	10.19	14.4	10.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	196.1	293.1	2,881.9	10.07	14.7	9.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	262.2	277.3	2,914.1	9.24	11.1	10.5	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	216.0	272.7	2,623.4	9.01	12.1	9.6	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	186.0	258.9	2,325.7	8.91	12.5	9.0	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	169.3	257.2	2,232.1	9.00	13.2	8.7	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	158.2	252.0	2,113.4	8.92	13.4	8.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	144.2	245.5	1,962.3	8.81	13.6	8.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	220.1	228.8	2,080.4	7.85	9.5	9.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	232.8	243.2	2,272.5	8.12	9.8	9.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	215.3	236.4	2,134.6	8.08	9.9	9.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	197.6	229.7	1,995.6	8.04	10.1	8.7	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	171.9	227.7	1,855.9	7.94	10.8	8.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	157.0	221.0	1,724.2	7.88	11.0	7.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	143.0	214.8	1,598.6	7.80	11.2	7.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	131.3	209.7	1,492.2	7.72	11.4	7.1	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	123.2	211.2	1,468.0	7.73	11.9	7.0	12.87	18.24	7.56	0.696	7.59
55 I-T	40.26	113.0	206.1	1,368.3	7.62	12.1	6.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	103.0	201.4	1,268.9	7.51	12.3	6.3	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	197.8	208.6	1,755.0	7.35	8.9	8.4	20.76	16.66	11.53	0.960	10.07
65 T	65.04	180.7	204.4	1,647.5	7.31	9.1	8.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	178.6	204.7	1,616.2	7.27	9.1	7.9	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	163.7	199.2	1,508.6	7.20	9.2	7.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	142.3	197.6	1,402.0	7.09	9.9	7.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	129.9	192.0	1,300.5	7.02	10.0	6.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	117.5	186.4	1,198.1	6.93	10.2	6.4	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	106.7	181.7	1,108.1	6.84	10.4	6.1	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	93.5	181.2	1,040.4	6.82	11.1	5.7	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	84.4	176.7	956.2	6.70	11.3	5.4	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	75.4	172.4	872.4	6.57	11.6	5.1	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	66.9	167.2	786.9	6.35	11.8	4.7	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	148.3	180.1	1,270.8	6.64	8.6	7.1	17.07	15.00	10.50	0.850	8.46
54 T	53.99	136.0	176.9	1,194.5	6.58	8.8	6.8	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	112.7	165.0	989.9	6.29	8.8	6.0	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	102.6	160.6	909.1	6.20	8.9	5.7	11.92	13.90	10.00	0.643	5.25

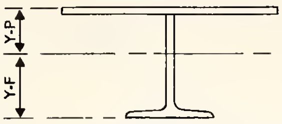


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53 I-T	36.44	88.3	157.4	824.0	6.06	9.3	5.2	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	80.0	153.7	759.3	5.95	9.5	4.9	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	71.8	149.9	694.3	5.83	9.7	4.6	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	64.0	150.3	662.2	5.80	10.3	4.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	57.2	146.5	601.8	5.65	10.5	4.1	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	49.9	141.9	535.1	5.44	10.7	3.8	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	102.9	138.9	755.1	5.44	7.3	5.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	92.3	135.7	695.6	5.38	7.5	5.1	12.35	12.04	9.01	0.772	5.65
38 T	38.01	83.0	132.9	642.3	5.30	7.7	4.8	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	73.9	135.4	612.3	5.32	8.3	4.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	66.6	132.0	561.5	5.21	8.4	4.3	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	59.5	128.9	511.5	5.11	8.6	4.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	53.8	128.9	488.1	5.06	9.1	3.8	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.4	124.8	429.5	4.88	9.3	3.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.4	121.0	380.2	4.70	9.4	3.1	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.0	117.1	324.9	4.42	10.2	2.8	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.5	112.4	282.2	4.19	10.3	2.5	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.2	106.7	240.5	3.93	10.4	2.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.7	102.9	207.3	3.71	10.5	2.0	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	71.9	116.3	499.5	4.72	6.9	4.3	10.73	10.62	8.29	0.740	4.83
34 T	34.03	67.2	114.8	474.4	4.67	7.1	4.1	10.01	10.57	8.27	0.685	4.54
31 T	31.01	61.0	112.6	440.0	4.60	7.2	3.9	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	56.6	109.4	400.6	4.43	7.1	3.7	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	48.8	105.3	352.2	4.28	7.2	3.3	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	40.8	100.8	301.2	4.07	7.4	3.0	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	36.8	102.9	293.8	4.09	8.0	2.9	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	31.6	99.3	256.8	3.91	8.1	2.6	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.1	94.2	215.2	3.66	8.2	2.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	23.7	94.4	206.1	3.60	8.7	2.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	20.7	90.6	181.4	3.42	8.7	2.0	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.0	86.6	158.4	3.24	8.8	1.8	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	13.9	81.1	124.1	2.94	9.0	1.5	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	52.4	96.3	330.6	4.01	6.3	3.4	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	48.1	94.8	308.9	3.95	6.4	3.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	43.8	93.2	286.6	3.88	6.5	3.1	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	61.3	88.0	317.6	3.70	5.2	3.6	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	56.2	86.4	296.4	3.66	5.3	3.4	10.43	8.08	8.54	0.795	3.92
32 T	31.96	51.0	84.7	274.7	3.61	5.4	3.2	9.40	8.00	8.50	0.715	3.54
29 T	28.97	46.5	83.2	255.1	3.55	5.5	3.1	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.0	83.3	236.5	3.52	5.9	2.8	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.0	81.6	217.0	3.44	6.0	2.7	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.3	80.0	198.6	3.36	6.1	2.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	28.8	77.7	179.8	3.24	6.2	2.3	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	28.9	79.8	184.2	3.28	6.4	2.3	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	24.7	76.8	160.0	3.13	6.5	2.1	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	20.8	75.6	142.9	3.01	6.9	1.9	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.4	71.7	120.8	2.82	6.9	1.7	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.2	69.6	109.2	2.70	7.2	1.6	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	12.9	65.8	93.2	2.53	7.2	1.4	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.1	61.8	73.8	2.30	7.3	1.2	2.19	7.90	3.94	0.204	1.34

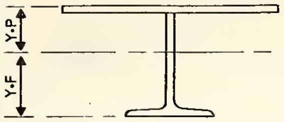


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	27.5	69.1	151.3	2.96	5.5	2.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	24.7	67.7	137.9	2.87	5.6	2.0	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.4	65.5	121.8	2.75	5.7	1.9	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.8	55.6	69.0	2.20	6.4	1.2	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.8	42.7	33.1	1.60	6.9	0.8	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.5	58.9	113.2	2.58	4.8	1.9	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.3	57.0	99.9	2.48	4.9	1.8	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.7	55.3	88.5	2.37	5.0	1.6	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	12.9	53.1	71.4	2.18	5.5	1.3	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.2	52.6	71.6	2.19	5.4	1.4	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.2	49.9	61.1	2.05	5.5	1.2	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.4	46.9	51.7	1.91	5.5	1.1	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.2	46.7	51.1	1.90	5.5	1.1	2.43	6.00	4.00	0.269	1.38
7 T	7.04	7.8	44.3	43.9	1.78	5.6	1.0	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.6	41.2	36.6	1.65	5.6	0.9	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.3	41.4	36.4	1.65	5.7	0.9	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.1	46.3	68.6	2.07	4.3	1.5	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	13.9	44.6	60.0	1.97	4.3	1.3	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.4	41.9	50.0	1.84	4.4	1.2	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.0	41.5	46.2	1.78	4.6	1.1	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.6	39.3	40.2	1.68	4.7	1.0	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.4	37.0	34.6	1.58	4.7	0.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.7	33.6	27.0	1.42	4.8	0.8	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.2	29.9	20.8	1.26	4.9	0.7	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.2	32.9	33.7	1.52	3.7	1.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.7	30.8	28.4	1.41	3.7	0.9	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.5	29.3	24.9	1.34	3.8	0.8	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.4	27.2	21.0	1.24	3.9	0.8	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.3	24.7	16.9	1.13	3.9	0.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.6	19.4	10.7	0.92	4.1	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.0	14.9	7.4	0.77	3.6	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.8	22.1	17.1	1.10	3.0	0.8	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.2	18.8	12.4	0.96	3.0	0.7	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.0	15.8	8.9	0.83	3.0	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.5	10.7	4.7	0.62	3.2	0.4	0.65	3.00	1.84	0.167	0.34



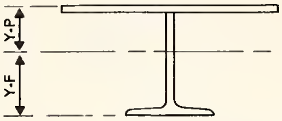
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

28.05 # PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 I-T	99.55	409.9	497.7	6,965.3	12.66	17.0	14.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	385.5	486.1	6,632.1	12.61	17.2	13.6	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	359.8	474.3	6,279.3	12.51	17.5	13.2	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	332.3	461.8	5,896.1	12.36	17.7	12.8	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	421.4	444.8	5,965.1	11.62	14.2	13.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	327.6	428.0	5,189.4	11.50	15.8	12.1	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	294.8	412.8	4,771.5	11.42	16.2	11.6	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	271.3	402.0	4,469.4	11.31	16.5	11.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	349.3	386.2	4,572.0	10.61	13.1	11.8	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	320.6	381.9	4,354.9	10.55	13.6	11.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	295.9	371.8	4,094.5	10.52	13.8	11.0	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	270.5	361.7	3,820.5	10.46	14.1	10.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	247.0	361.9	3,665.3	10.28	14.8	10.1	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	221.6	349.9	3,360.5	10.16	15.2	9.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	200.2	339.7	3,096.7	10.01	15.5	9.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	267.7	320.5	3,163.3	9.29	11.8	9.9	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	220.8	314.3	2,831.0	9.02	12.8	9.0	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	189.9	299.8	2,505.1	8.87	13.2	8.4	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	172.7	298.5	2,398.5	8.93	13.9	8.0	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	161.2	292.9	2,268.0	8.84	14.1	7.7	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	146.9	285.9	2,102.1	8.71	14.3	7.4	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	225.2	265.2	2,266.2	7.90	10.1	8.5	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	237.9	280.9	2,469.0	8.17	10.4	8.8	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	219.7	273.8	2,317.2	8.12	10.5	8.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	201.6	266.7	2,163.8	8.06	10.7	8.1	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	175.5	263.9	2,003.2	7.92	11.4	7.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	160.0	256.8	1,858.2	7.84	11.6	7.2	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	145.6	250.2	1,719.9	7.73	11.8	6.9	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	133.5	244.7	1,602.4	7.63	12.0	6.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	125.4	246.2	1,572.9	7.62	12.5	6.4	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	115.0	240.7	1,463.4	7.50	12.7	6.1	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	104.7	235.4	1,354.1	7.37	12.9	5.8	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	202.2	242.5	1,913.2	7.40	9.5	7.9	20.76	16.66	11.53	0.960	10.07
65 T	65.04	184.6	237.9	1,791.9	7.33	9.7	7.5	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	182.2	237.9	1,754.6	7.28	9.6	7.4	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	166.9	232.0	1,635.2	7.20	9.8	7.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	145.2	229.6	1,512.5	7.06	10.4	6.6	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	132.4	223.5	1,400.7	6.96	10.6	6.3	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	119.6	217.5	1,287.6	6.85	10.8	5.9	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	108.5	212.3	1,188.2	6.73	11.0	5.6	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	95.1	211.8	1,110.8	6.69	11.7	5.2	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	85.7	206.8	1,018.3	6.54	11.9	4.9	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	76.5	202.0	926.2	6.39	12.1	4.6	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	67.9	195.8	833.1	6.16	12.3	4.3	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	151.4	210.1	1,380.4	6.64	9.1	6.6	17.07	15.00	10.50	0.850	8.46
54 T	53.99	138.8	206.5	1,294.4	6.56	9.3	6.3	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	114.6	192.9	1,067.8	6.23	9.3	5.5	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	104.2	188.1	977.9	6.12	9.4	5.2	11.92	13.90	10.00	0.643	5.25

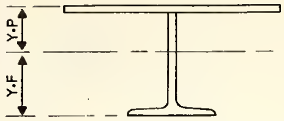


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 8 x 53 I-T	36.44	89.7	184.2	882.2	5.95	9.8	4.8	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	81.2	180.1	810.7	5.82	10.0	4.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	72.7	175.7	739.2	5.68	10.2	4.2	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	64.9	176.1	702.6	5.63	10.8	4.0	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	58.0	171.7	636.6	5.46	11.0	3.7	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	50.6	166.1	564.1	5.24	11.2	3.4	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	104.9	162.8	818.8	5.41	7.8	5.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	93.9	159.2	751.8	5.32	8.0	4.7	12.35	12.04	9.01	0.772	5.65
38 T	38.01	84.4	155.9	692.0	5.22	8.2	4.4	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	75.0	158.5	655.3	5.21	8.7	4.1	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	67.5	154.7	599.3	5.09	8.9	3.9	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	60.3	151.1	544.1	4.96	9.0	3.6	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	54.5	150.9	517.5	4.90	9.5	3.4	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	46.9	146.1	453.5	4.70	9.7	3.1	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	40.8	141.5	400.0	4.50	9.8	2.8	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.4	136.3	340.1	4.22	10.5	2.5	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	27.8	130.6	294.5	3.99	10.6	2.3	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.5	123.6	250.2	3.72	10.7	2.0	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	19.9	118.7	214.9	3.50	10.8	1.8	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	73.1	136.5	538.3	4.65	7.4	3.9	10.73	10.62	8.29	0.740	4.83
34 T	34.03	68.3	134.8	510.2	4.59	7.5	3.8	10.01	10.57	8.27	0.685	4.54
31 T	31.01	62.0	132.2	471.7	4.50	7.6	3.6	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	57.4	128.1	428.3	4.33	7.5	3.3	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	49.4	123.3	375.0	4.15	7.6	3.0	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	41.3	117.9	319.1	3.93	7.7	2.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.2	120.1	310.0	3.93	8.3	2.6	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.0	115.7	270.0	3.74	8.4	2.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.4	109.4	225.3	3.48	8.5	2.1	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.0	109.3	215.3	3.42	9.0	2.0	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.0	104.6	189.0	3.24	9.0	1.8	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.2	99.6	164.6	3.06	9.0	1.7	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.0	92.6	128.3	2.76	9.2	1.4	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	53.2	113.0	354.8	3.93	6.7	3.1	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	48.8	111.2	330.6	3.85	6.8	3.0	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.4	109.2	305.8	3.77	6.9	2.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	62.5	103.4	344.7	3.67	5.5	3.3	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	57.2	101.5	320.8	3.61	5.6	3.2	10.43	8.08	8.54	0.795	3.92
32 T	31.96	51.9	99.5	296.3	3.54	5.7	3.0	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.2	97.6	274.3	3.47	5.8	2.8	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	40.6	97.6	252.7	3.42	6.2	2.6	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	36.5	95.4	231.1	3.33	6.3	2.4	6.62	8.06	7.04	0.563	2.78
20 T	19.99	32.8	93.5	210.7	3.24	6.4	2.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.2	90.6	190.2	3.12	6.5	2.1	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.3	92.8	194.6	3.15	6.7	2.1	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.0	89.1	168.3	2.99	6.7	1.9	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.0	87.3	149.6	2.86	7.1	1.7	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.6	82.4	126.1	2.67	7.2	1.5	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.4	79.6	113.7	2.55	7.4	1.4	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.1	74.9	96.8	2.38	7.4	1.3	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.2	69.6	76.3	2.16	7.5	1.1	2.19	7.90	3.94	0.204	1.34

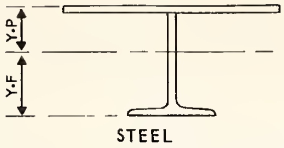


PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

30t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 6 3/4 x 19 T	19.01	27.9	80.5	160.6	2.85	5.8	2.0	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.0	78.7	145.8	2.76	5.8	1.9	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.6	75.9	128.3	2.63	5.9	1.7	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	10.9	62.9	71.7	2.07	6.5	1.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5 I-T	4.27	4.9	46.3	34.0	1.48	7.0	0.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	23.8	68.4	120.2	2.48	5.1	1.8	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.6	66.0	105.6	2.37	5.1	1.6	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	17.9	63.7	93.3	2.26	5.2	1.5	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.1	60.4	74.6	2.07	5.7	1.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.4	60.0	74.9	2.07	5.6	1.2	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.3	56.5	63.8	1.94	5.6	1.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.5	52.7	53.8	1.80	5.7	1.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.4	52.5	53.2	1.79	5.7	1.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.0	49.4	45.6	1.67	5.7	0.9	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	6.7	45.4	37.9	1.54	5.7	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.4	45.7	37.7	1.54	5.9	0.8	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.4	53.3	72.6	1.98	4.4	1.4	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.1	51.0	63.2	1.88	4.5	1.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.6	47.6	52.5	1.74	4.5	1.1	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.1	46.8	48.4	1.69	4.8	1.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.8	44.0	42.0	1.59	4.8	1.0	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.5	41.2	36.1	1.48	4.8	0.9	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.8	36.8	28.1	1.33	4.9	0.8	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.3	32.3	21.6	1.18	5.0	0.7	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.3	37.0	35.5	1.44	3.8	1.0	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	7.8	34.4	29.9	1.34	3.8	0.9	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.6	32.4	26.1	1.26	3.9	0.8	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.6	29.8	21.9	1.17	4.0	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.4	26.7	17.6	1.06	4.0	0.7	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.7	20.5	11.2	0.86	4.1	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.1	15.6	7.8	0.72	3.7	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	5.9	24.4	18.1	1.05	3.1	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.3	20.5	13.1	0.91	3.0	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.1	16.8	9.4	0.78	3.1	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.6	11.1	5.0	0.58	3.2	0.5	0.65	3.00	1.84	0.167	0.34

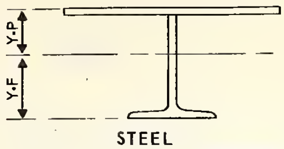


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
30 x 10 1/2 x 132 I-T	99.55	418.6	561.9	7,448.8	12.70	17.8	13.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	393.5	549.9	7,090.2	12.64	18.0	12.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	367.3	537.5	6,709.2	12.52	18.3	12.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	339.2	524.1	6,294.7	12.35	18.6	12.0	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	429.8	504.0	6,409.2	11.69	14.9	12.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	334.1	485.8	5,548.9	11.51	16.6	11.4	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	300.4	469.9	5,096.4	11.39	17.0	10.8	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	276.4	458.6	4,768.5	11.26	17.3	10.4	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	355.9	439.7	4,915.3	10.66	13.8	11.2	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	326.6	434.9	4,672.2	10.57	14.3	10.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	301.3	424.4	4,389.1	10.52	14.6	10.3	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	275.1	413.8	4,090.2	10.43	14.9	9.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	251.5	413.0	3,912.8	10.23	15.6	9.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	225.5	400.3	3,581.7	10.08	15.9	8.9	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	203.6	389.3	3,294.9	9.91	16.2	8.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	272.4	366.7	3,399.1	9.30	12.5	9.3	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	224.9	358.7	3,026.1	8.98	13.5	8.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	193.2	343.3	2,671.5	8.80	13.8	7.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	175.5	342.3	2,551.5	8.83	14.5	7.5	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	163.8	336.4	2,409.5	8.72	14.7	7.2	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	149.1	328.7	2,228.9	8.56	14.9	6.8	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	229.5	304.1	2,442.0	7.92	10.6	8.0	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	242.2	321.2	2,655.4	8.18	11.0	8.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	223.6	313.6	2,489.2	8.11	11.1	7.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	204.9	306.1	2,321.0	8.03	11.3	7.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	178.5	302.3	2,140.1	7.86	12.0	7.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	162.6	294.9	1,981.9	7.76	12.2	6.7	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	147.8	287.7	1,830.8	7.63	12.4	6.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	135.5	281.7	1,702.4	7.51	12.6	6.0	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	127.3	283.2	1,667.9	7.49	13.1	5.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	116.6	277.1	1,548.9	7.34	13.3	5.6	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	106.1	271.3	1,430.1	7.19	13.5	5.3	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	206.0	278.7	2,062.2	7.40	10.0	7.4	20.76	16.66	11.53	0.960	10.07
65 T	65.04	187.9	273.5	1,927.1	7.32	10.3	7.0	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	185.2	273.2	1,884.0	7.26	10.2	6.9	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	169.6	266.7	1,752.9	7.16	10.3	6.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	147.6	263.5	1,614.6	6.99	10.9	6.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	134.5	256.9	1,492.5	6.88	11.1	5.8	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	121.4	250.3	1,369.0	6.74	11.3	5.5	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	110.0	244.5	1,260.4	6.61	11.5	5.2	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	96.4	244.0	1,173.6	6.53	12.2	4.8	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	86.8	238.3	1,073.3	6.37	12.4	4.5	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	77.4	232.9	973.4	6.19	12.6	4.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	68.7	225.7	873.5	5.95	12.7	3.9	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 I-T	58.04	154.0	242.0	1,482.2	6.61	9.6	6.1	17.07	15.00	10.50	0.850	8.46
54 I-T	53.99	141.1	237.8	1,386.6	6.51	9.8	5.8	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	116.3	222.4	1,138.7	6.14	9.8	5.1	13.31	14.16	10.04	0.718	5.87



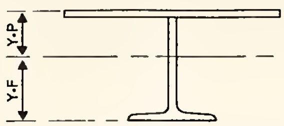
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
14 x 10 x 61 I-T	40.54	105.5	217.0	1,039.9	6.01	9.9	4.8	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	90.8	212.3	934.4	5.82	10.3	4.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	82.2	207.6	856.5	5.68	10.4	4.1	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	73.6	202.6	778.8	5.52	10.6	3.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	65.7	202.9	737.9	5.45	11.2	3.6	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	58.6	197.7	666.9	5.27	11.4	3.4	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	51.1	191.1	589.2	5.03	11.5	3.1	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	106.5	188.0	877.2	5.35	8.2	4.7	13.81	12.15	9.06	0.872	6.26
42 T	41.99	95.3	183.9	802.8	5.24	8.4	4.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	85.6	180.1	736.6	5.12	8.6	4.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	76.0	182.7	693.7	5.09	9.1	3.8	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	68.3	178.2	632.7	4.95	9.3	3.5	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	60.9	174.1	572.6	4.81	9.4	3.3	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	55.1	173.6	543.3	4.74	9.9	3.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	47.4	167.9	474.3	4.52	10.0	2.8	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	41.2	162.3	417.1	4.31	10.1	2.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	32.8	155.7	353.2	4.02	10.8	2.3	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.1	148.7	305.0	3.79	10.9	2.1	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	23.7	140.2	258.6	3.53	10.9	1.8	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.1	134.0	221.5	3.31	11.0	1.7	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	74.1	157.6	573.3	4.56	7.7	3.6	10.73	10.62	8.29	0.740	4.83
34 T	34.03	69.2	155.5	542.2	4.49	7.8	3.5	10.01	10.57	8.27	0.685	4.54
31 T	31.01	62.8	152.5	499.9	4.39	8.0	3.3	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	58.1	147.5	452.9	4.21	7.8	3.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	50.0	141.8	395.0	4.02	7.9	2.8	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	41.8	135.2	334.7	3.79	8.0	2.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	37.6	137.5	324.2	3.77	8.6	2.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.3	132.2	281.3	3.58	8.7	2.1	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	26.7	124.4	233.9	3.32	8.8	1.9	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.3	124.0	223.1	3.26	9.2	1.8	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.2	118.2	195.5	3.08	9.2	1.7	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.4	112.1	170.0	2.90	9.2	1.5	3.40	10.00	4.00	0.269	2.30
11 I-T	8.93	14.1	103.2	132.0	2.60	9.3	1.3	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	53.9	130.3	376.4	3.83	7.0	2.9	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	49.4	128.0	349.8	3.74	7.1	2.7	8.09	9.06	7.53	0.630	3.53
25 T	24.99	44.9	125.6	322.7	3.65	7.2	2.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	63.5	119.4	369.5	3.61	5.8	3.1	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	58.1	117.1	342.9	3.54	5.9	2.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	52.6	114.7	315.7	3.47	6.0	2.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	47.9	112.5	291.4	3.39	6.1	2.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	41.1	112.1	267.0	3.32	6.5	2.4	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	37.0	109.5	243.5	3.22	6.6	2.2	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.1	107.0	221.4	3.12	6.7	2.1	5.88	8.00	7.00	0.503	2.45
18 T	18.36	29.5	103.4	199.3	2.99	6.8	1.9	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	29.6	105.8	203.7	3.02	6.9	1.9	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.3	101.2	175.5	2.86	6.9	1.7	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.3	98.7	155.5	2.73	7.3	1.6	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	17.8	92.6	130.7	2.53	7.3	1.4	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.6	89.1	117.6	2.42	7.6	1.3	3.27	8.12	4.01	0.314	1.98

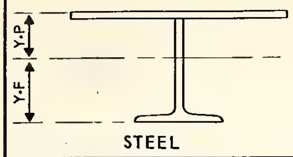


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 13 1-T	9.79	13.2	83.4	99.9	2.25	7.6	1.2	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	10.3	76.6	78.5	2.03	7.6	1.0	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	28.3	91.9	168.8	2.74	6.0	1.8	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.3	89.5	152.8	2.64	6.0	1.7	5.00	7.00	6.75	0.453	2.00
15 T	14.99	21.9	85.9	134.0	2.51	6.1	1.6	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.1	69.6	74.1	1.95	6.7	1.1	2.53	7.00	4.00	0.272	1.47
7 x 2 1/8 x 5.5I-T	4.27	5.0	49.2	35.0	1.39	7.0	0.7	1.25	7.00	2.08	0.188	0.88
6 x 6 1/2 x 18 T	17.99	24.1	77.9	126.5	2.39	5.2	1.6	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	20.8	74.8	110.7	2.27	5.3	1.5	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.1	71.8	97.4	2.16	5.4	1.4	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	13.3	67.2	77.5	1.96	5.8	1.2	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.6	66.9	77.9	1.97	5.7	1.2	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.5	62.5	66.1	1.83	5.8	1.1	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.6	57.9	55.7	1.70	5.8	1.0	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.5	57.6	55.1	1.69	5.8	1.0	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.1	53.8	47.1	1.58	5.8	0.9	2.07	5.96	3.97	0.224	1.19
8.5I-T	6.03	6.8	49.0	39.1	1.45	5.8	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.5	49.2	38.9	1.45	6.0	0.8	1.72	6.00	3.06	0.175	1.05
5 x 5 3/4 x 14.5 T	14.52	16.6	60.0	76.2	1.90	4.6	1.3	4.27	5.11	5.80	0.500	1.47
12.5 T	12.48	14.3	57.0	66.1	1.79	4.6	1.2	3.67	5.04	5.76	0.430	1.27
10.5 T	10.54	11.7	52.8	54.7	1.66	4.7	1.0	3.10	4.95	5.75	0.340	1.18
5 x 4 x 9.5 T	9.52	10.3	51.6	50.4	1.60	4.9	1.0	2.80	5.13	4.02	0.394	1.28
8.5 T	8.47	8.9	48.2	43.6	1.50	4.9	0.9	2.49	5.06	4.01	0.329	1.21
7.5 T	7.48	7.6	44.8	37.5	1.40	4.9	0.8	2.20	5.00	4.00	0.269	1.15
5.75 T	5.75	5.9	39.5	29.1	1.25	5.0	0.7	1.69	4.94	3.95	0.204	0.89
5 x 2 3/4 x 4.5 T	4.49	4.4	34.2	22.4	1.11	5.1	0.7	1.32	5.00	2.68	0.204	0.77
4 x 5 1/4 x 10 T	10.00	9.5	40.8	37.2	1.37	3.9	0.9	2.94	4.07	5.27	0.378	1.00
8.5 T	8.50	8.0	37.6	31.2	1.27	3.9	0.8	2.50	4.00	5.25	0.308	0.92
4 x 4 x 7.5 T	7.55	6.7	35.2	27.2	1.19	4.0	0.8	2.22	4.06	4.01	0.314	0.99
6.5 T	6.49	5.7	32.0	22.9	1.10	4.0	0.7	1.91	4.00	4.00	0.254	0.92
5 T	5.03	4.5	28.4	18.3	1.00	4.1	0.6	1.48	3.95	3.94	0.204	0.67
4 x 2 1/4 x 3.25 T	3.26	2.8	21.3	11.7	0.81	4.2	0.5	0.96	4.00	2.28	0.189	0.54
3 1/2 x 2 1/8 x 2.75 T	2.74	2.2	16.2	8.2	0.68	3.7	0.5	0.80	3.50	2.08	0.175	0.44
3 x 4 x 8 T	8.02	6.0	26.4	19.1	1.00	3.2	0.7	2.36	3.13	4.03	0.404	0.81
6 T	6.02	4.4	21.9	13.8	0.86	3.1	0.6	1.77	3.00	4.00	0.279	0.69
4.25 T	4.25	3.2	17.7	9.9	0.74	3.1	0.6	1.25	2.92	3.94	0.194	0.49
3 x 1 7/8 x 2.2 T	2.21	1.6	11.5	5.4	0.55	3.3	0.5	0.65	3.00	1.84	0.167	0.34

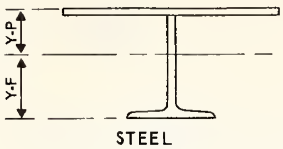


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	852.3	905.0	15,088.4	14.35	17.7	16.7	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	784.9	877.0	14,130.3	14.29	18.0	16.1	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	716.4	853.5	13,193.7	14.23	18.4	15.5	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	545.1	810.0	11,200.0	14.07	20.5	13.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	508.8	788.9	10,571.0	13.95	20.8	13.4	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	463.0	770.2	9,824.7	13.73	21.2	12.8	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 I-T	121.81	572.7	737.7	9,915.4	12.99	17.3	13.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	433.4	706.7	8,375.2	12.66	19.3	11.9	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	407.1	693.6	7,962.0	12.56	19.6	11.5	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	379.8	679.6	7,522.1	12.40	19.8	11.1	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	350.6	664.0	7,043.2	12.20	20.1	10.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	443.9	637.3	7,262.6	11.71	16.4	11.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	345.1	615.6	6,226.5	11.39	18.0	10.1	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	309.8	598.1	5,701.3	11.21	18.4	9.5	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	284.8	585.1	5,320.9	11.03	18.7	9.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	366.8	560.0	5,566.5	10.62	15.2	9.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	336.7	553.7	5,270.6	10.49	15.7	9.5	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	310.1	542.3	4,939.3	10.39	15.9	9.1	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	282.8	530.5	4,588.4	10.25	16.2	8.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	259.1	527.1	4,369.8	10.03	16.9	8.3	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	231.9	512.7	3,985.1	9.82	17.2	7.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	209.2	499.6	3,652.8	9.60	17.5	7.3	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	280.1	470.0	3,839.3	9.20	13.7	8.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	231.8	457.6	3,387.3	8.81	14.6	7.4	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	198.6	440.1	2,974.3	8.56	15.0	6.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	180.2	439.5	2,826.8	8.53	15.7	6.4	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	168.1	432.4	2,662.0	8.39	15.8	6.2	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	152.8	423.1	2,453.3	8.20	16.1	5.8	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	236.6	390.9	2,770.4	7.84	11.7	7.1	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	249.4	411.1	3,004.7	8.11	12.0	7.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	229.9	402.4	2,808.7	8.00	12.2	7.0	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	210.4	393.6	2,610.2	7.87	12.4	6.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	183.4	387.7	2,390.0	7.66	13.0	6.2	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	166.8	379.0	2,205.0	7.52	13.2	5.8	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	151.5	370.3	2,029.0	7.35	13.4	5.5	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	138.6	363.1	1,879.5	7.20	13.6	5.2	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	130.4	364.4	1,835.6	7.16	14.1	5.0	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	119.3	356.8	1,698.7	6.99	14.2	4.8	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	108.4	349.5	1,562.0	6.81	14.4	4.5	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 70.5 T	70.58	212.2	359.1	2,339.1	7.31	11.0	6.5	20.76	16.66	11.53	0.960	10.07
65 T	65.04	193.4	352.6	2,176.1	7.19	11.3	6.2	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	190.2	351.5	2,122.2	7.12	11.2	6.0	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	174.0	343.6	1,967.3	6.98	11.3	5.7	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	151.6	338.2	1,799.6	6.78	11.9	5.3	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	137.9	330.3	1,657.2	6.63	12.0	5.0	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	124.3	322.2	1,513.3	6.47	12.2	4.7	13.23	16.00	8.50	0.715	7.08

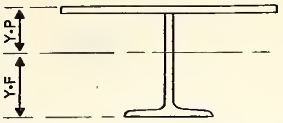


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
16 x 8 1/2 x 58 I-T	40.79	112.5	314.9	1,387.4	6.30	12.3	4.4	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	98.5	313.8	1,282.9	6.18	13.0	4.1	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	88.6	306.4	1,168.1	5.99	13.2	3.8	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	78.9	299.3	1,054.0	5.79	13.4	3.5	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	70.0	289.3	941.9	5.53	13.5	3.3	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	158.3	312.3	1,667.7	6.45	10.5	5.3	17.07	15.00	10.50	0.850	8.46
54 T	53.99	144.9	306.8	1,553.5	6.32	10.7	5.1	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	119.0	287.0	1,264.8	5.90	10.6	4.4	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	107.7	280.0	1,149.3	5.74	10.7	4.1	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	92.7	273.1	1,025.4	5.52	11.1	3.8	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	83.8	266.8	935.7	5.35	11.2	3.5	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	74.9	260.0	846.8	5.17	11.3	3.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	67.0	259.7	798.2	5.08	11.9	3.1	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	59.7	252.5	718.1	4.88	12.0	2.8	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	52.0	243.1	631.4	4.64	12.1	2.6	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	109.3	242.9	981.8	5.17	9.0	4.0	13.81	12.15	9.06	0.872	6.26
42 T	41.99	97.6	237.5	893.3	5.03	9.2	3.8	12.35	12.04	9.01	0.772	5.65
38 T	38.01	87.5	232.2	815.2	4.89	9.3	3.5	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	77.5	234.4	760.5	4.81	9.8	3.2	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	69.7	228.4	690.5	4.65	9.9	3.0	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	62.0	222.6	621.6	4.49	10.0	2.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	56.1	221.3	587.3	4.40	10.5	2.7	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	48.2	213.1	509.5	4.17	10.6	2.4	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	41.9	205.0	445.8	3.96	10.6	2.2	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	33.4	194.5	375.2	3.67	11.2	1.9	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	28.6	184.4	322.8	3.44	11.3	1.8	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	24.1	172.3	272.7	3.19	11.3	1.6	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	20.5	163.1	232.6	2.98	11.3	1.4	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	75.9	202.8	634.8	4.34	8.4	3.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	70.8	199.9	598.2	4.26	8.5	3.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	64.1	195.6	548.9	4.14	8.6	2.8	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	59.2	188.4	495.5	3.96	8.4	2.6	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	50.9	180.4	429.6	3.75	8.4	2.4	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	42.5	170.8	361.5	3.51	8.5	2.1	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	38.4	172.9	348.3	3.47	9.1	2.0	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	32.9	165.1	300.6	3.28	9.1	1.8	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	27.2	153.8	248.7	3.02	9.2	1.6	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	24.7	152.4	236.6	2.95	9.6	1.6	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	21.6	144.2	206.8	2.78	9.6	1.4	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	18.8	135.5	179.3	2.61	9.6	1.3	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	14.4	122.3	138.5	2.33	9.6	1.1	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	55.2	166.5	414.1	3.61	7.5	2.5	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	50.5	163.1	383.2	3.51	7.6	2.3	8.09	9.06	7.53	0.630	3.53
25 T	24.99	45.9	159.5	351.9	3.41	7.7	2.2	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	65.3	153.4	413.7	3.47	6.3	2.7	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	59.6	150.1	382.0	3.38	6.4	2.5	10.43	8.08	8.54	0.795	3.92
32 T	31.96	53.9	146.7	349.9	3.29	6.5	2.4	9.40	8.00	8.50	0.715	3.54
29 T	28.97	49.0	143.4	321.3	3.19	6.6	2.2	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	42.0	142.0	291.9	3.10	6.9	2.1	7.35	8.13	7.07	0.628	3.08



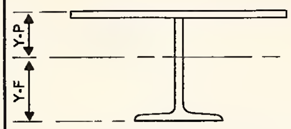
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 7 x 22.5 T	22.51	37.8	138.0	265.0	2.99	7.0	1.9	6.62	8.06	7.04	0.563	2.78
20 T	19.99	33.8	134.2	239.7	2.88	7.1	1.8	5.88	8.00	7.00	0.503	2.45
18 T	18.36	30.1	128.9	215.0	2.75	7.1	1.7	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 I-T	18.42	30.2	131.6	219.4	2.78	7.3	1.7	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	25.8	124.8	188.0	2.61	7.3	1.5	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	21.7	120.3	165.6	2.48	7.6	1.4	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	18.2	111.6	138.7	2.29	7.6	1.2	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	15.9	106.4	124.6	2.18	7.8	1.2	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	13.5	98.3	105.6	2.02	7.8	1.1	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	10.5	88.3	82.6	1.81	7.8	0.9	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	28.9	114.4	183.0	2.53	6.3	1.6	5.59	7.06	6.78	0.513	2.20
17 T	17.00	25.8	110.7	164.9	2.43	6.4	1.5	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.4	105.2	144.0	2.29	6.4	1.4	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.4	81.0	78.5	1.75	6.9	1.0	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	24.7	96.2	137.4	2.21	5.6	1.4	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.3	91.4	119.6	2.08	5.6	1.3	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	18.6	86.9	104.9	1.97	5.6	1.2	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	13.6	79.4	82.7	1.78	6.1	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	13.9	79.1	83.2	1.78	6.0	1.1	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	11.8	73.0	70.5	1.65	6.0	1.0	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	9.9	66.6	59.3	1.53	6.0	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	9.8	66.2	58.6	1.52	6.0	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.3	60.9	50.0	1.41	6.0	0.8	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	7.0	54.6	41.5	1.30	5.9	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	6.7	54.7	41.3	1.29	6.1	0.8	1.72	6.00	3.06	0.175	1.05

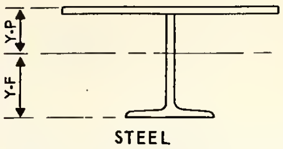


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
33 x 15 3/4 x 240 I-T	170.91	879.3	1,096.7	16,836.3	14.48	19.1	15.4	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	809.0	1,066.8	15,753.3	14.38	19.5	14.8	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	737.4	1,041.4	14,677.6	14.26	19.9	14.1	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	560.7	993.9	12,367.3	13.94	22.1	12.4	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	523.1	971.1	11,661.1	13.79	22.3	12.0	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	475.8	949.2	10,806.9	13.52	22.7	11.4	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 1-T	121.81	588.4	907.3	11,022.0	12.94	18.7	12.1	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	445.3	870.7	9,221.3	12.47	20.7	10.6	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	418.0	856.2	8,751.9	12.33	20.9	10.2	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	389.7	840.1	8,252.9	12.15	21.2	9.8	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	359.7	821.8	7,710.9	11.91	21.4	9.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	455.2	788.4	8,045.4	11.58	17.7	10.2	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	353.9	761.9	6,833.6	11.15	19.3	9.0	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	317.2	742.2	6,235.6	10.91	19.7	8.4	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	291.4	727.1	5,803.8	10.69	19.9	8.0	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	375.5	695.6	6,154.7	10.44	16.4	8.8	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	344.6	687.5	5,807.1	10.28	16.9	8.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	317.0	674.8	5,426.8	10.14	17.1	8.0	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	288.8	661.2	5,024.5	9.95	17.4	7.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	265.0	654.7	4,769.5	9.72	18.0	7.3	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	236.9	637.9	4,333.1	9.47	18.3	6.8	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	213.5	622.2	3,957.9	9.21	18.5	6.4	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	286.2	585.7	4,229.5	8.98	14.8	7.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	237.2	568.0	3,704.6	8.55	15.6	6.5	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	202.8	547.3	3,235.1	8.24	15.9	5.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	183.9	546.9	3,060.8	8.17	16.6	5.6	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	171.4	538.2	2,875.1	8.01	16.8	5.3	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	155.7	526.6	2,640.7	7.79	17.0	5.0	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	242.2	487.7	3,062.1	7.67	12.6	6.3	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	255.1	511.5	3,315.9	7.93	13.0	6.5	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	234.9	501.3	3,090.4	7.79	13.2	6.2	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	214.8	490.8	2,862.4	7.63	13.3	5.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	187.3	482.0	2,606.1	7.39	13.9	5.4	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	170.1	471.6	2,395.6	7.22	14.1	5.1	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	154.3	460.9	2,196.5	7.02	14.2	4.8	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	141.1	451.8	2,027.7	6.84	14.4	4.5	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	132.8	452.7	1,975.5	6.79	14.9	4.4	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	121.5	443.0	1,822.6	6.60	15.0	4.1	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	110.3	433.5	1,670.2	6.40	15.1	3.9	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	197.6	440.2	2,393.6	6.98	12.1	5.4	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	177.4	428.4	2,152.7	6.74	12.1	5.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	154.7	420.1	1,958.3	6.51	12.7	4.7	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	140.6	410.3	1,797.0	6.34	12.8	4.4	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	126.6	400.1	1,634.6	6.15	12.9	4.1	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	114.5	390.7	1,493.1	5.96	13.0	3.8	12.00	15.86	8.46	0.645	6.45

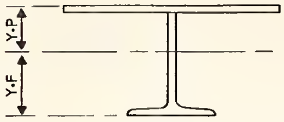


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
16 x 7 x 50 1-T	36.22	100.2	388.2	1,372.8	5.81	13.7	3.5	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	90.1	378.5	1,245.4	5.61	13.8	3.3	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	80.1	368.8	1,119.2	5.39	14.0	3.0	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	71.1	355.2	997.1	5.14	14.0	2.8	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	161.7	389.6	1,828.2	6.23	11.3	4.7	17.07	15.00	10.50	0.850	8.46
54 T	53.99	147.9	382.2	1,696.7	6.08	11.5	4.4	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	121.2	356.6	1,371.2	5.63	11.3	3.8	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	109.5	347.5	1,240.5	5.44	11.3	3.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	94.3	337.6	1,100.8	5.20	11.7	3.3	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	85.1	329.0	1,000.8	5.02	11.8	3.0	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	76.1	319.8	902.2	4.83	11.9	2.8	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	68.0	318.4	847.2	4.72	12.5	2.7	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	60.6	308.3	759.5	4.52	12.5	2.5	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	52.8	295.4	665.5	4.28	12.6	2.3	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	111.5	302.1	1,070.9	4.94	9.6	3.5	13.81	12.15	9.06	0.872	6.26
42 T	41.99	99.5	294.7	969.6	4.78	9.7	3.3	12.35	12.04	9.01	0.772	5.65
38 T	38.01	89.1	287.4	880.9	4.63	9.9	3.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	78.8	288.4	816.0	4.52	10.4	2.8	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	70.8	280.3	738.0	4.35	10.4	2.6	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	63.0	272.1	661.6	4.18	10.5	2.4	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	57.0	269.7	623.1	4.09	10.9	2.3	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	48.9	258.0	538.1	3.85	11.0	2.1	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	42.5	246.5	469.1	3.63	11.0	1.9	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	33.9	231.3	393.2	3.35	11.6	1.7	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	29.1	217.4	337.4	3.13	11.6	1.6	4.34	12.16	4.01	0.349	2.91
16.51-T	13.11	24.6	201.1	284.4	2.90	11.6	1.4	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	20.8	188.1	242.0	2.70	11.6	1.3	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	77.3	250.1	686.4	4.11	8.9	2.7	10.73	10.62	8.29	0.740	4.83
34 T	34.03	72.1	246.0	645.0	4.02	8.9	2.6	10.01	10.57	8.27	0.685	4.54
31 T	31.01	65.3	239.9	589.7	3.88	9.0	2.5	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	60.3	230.0	531.0	3.71	8.8	2.3	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	51.8	219.0	458.2	3.49	8.8	2.1	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	43.2	205.6	383.7	3.24	8.9	1.9	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	39.0	207.0	368.1	3.20	9.4	1.8	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	33.4	196.0	316.5	3.00	9.5	1.6	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	27.6	180.5	261.1	2.76	9.5	1.4	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	25.2	177.9	247.9	2.69	9.8	1.4	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	22.0	166.9	216.3	2.53	9.8	1.3	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	19.1	155.4	187.4	2.37	9.8	1.2	3.40	10.00	4.00	0.269	2.30
11.51-T	8.93	14.7	137.3	144.2	2.10	9.8	1.1	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	56.2	203.2	445.6	3.39	7.9	2.2	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	51.5	198.4	411.0	3.28	8.0	2.1	8.09	9.06	7.53	0.630	3.53
25 T	24.99	46.7	193.1	376.2	3.17	8.1	1.9	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	66.7	188.7	451.6	3.30	6.8	2.4	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	60.9	184.1	415.4	3.21	6.8	2.3	10.43	8.08	8.54	0.795	3.92
32 T	31.96	55.0	179.1	378.8	3.10	6.9	2.1	9.40	8.00	8.50	0.715	3.54
29 T	28.97	49.9	174.3	346.6	3.00	6.9	2.0	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	42.8	171.3	312.9	2.89	7.3	1.8	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	38.5	165.6	283.0	2.78	7.4	1.7	6.62	8.06	7.04	0.563	2.78
20 T	19.99	34.4	160.0	255.1	2.67	7.4	1.6	5.88	8.00	7.00	0.503	2.45
18 T	18.36	30.7	152.6	228.3	2.54	7.4	1.5	5.40	7.93	6.99	0.428	2.31

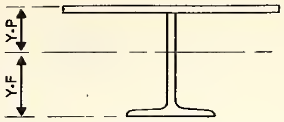


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 6 1/2 x 28 1-T	18.42	30.8	155.7	232.6	2.56	7.6	1.5	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.3	146.0	198.6	2.39	7.6	1.4	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	22.1	139.3	174.4	2.26	7.9	1.3	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	18.5	127.5	145.7	2.09	7.9	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	16.3	120.6	130.8	1.98	8.0	1.1	3.27	8.12	4.01	0.314	1.98
13 1-T	9.79	13.9	110.1	110.8	1.84	8.0	1.0	2.88	8.00	4.00	0.254	1.84
10 1-T	7.44	10.8	96.8	86.5	1.64	8.0	0.9	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	29.5	135.3	195.2	2.34	6.6	1.4	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.4	129.9	175.3	2.24	6.7	1.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	22.8	122.3	152.6	2.11	6.7	1.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	11.7	89.7	82.7	1.59	7.1	0.9	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.3	112.8	147.0	2.04	5.8	1.3	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	21.8	106.1	127.5	1.92	5.8	1.2	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	19.0	99.8	111.5	1.81	5.9	1.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	14.0	89.1	87.6	1.62	6.3	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.3	89.0	88.2	1.63	6.2	1.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.1	81.1	74.6	1.51	6.2	0.9	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.2	73.1	62.8	1.39	6.1	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.1	72.5	62.0	1.38	6.1	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	8.6	65.9	53.0	1.29	6.2	0.8	2.07	5.96	3.97	0.224	1.19
8.51-T	6.03	7.3	58.4	44.1	1.18	6.1	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.0	58.4	43.8	1.18	6.2	0.8	1.72	6.00	3.06	0.175	1.05



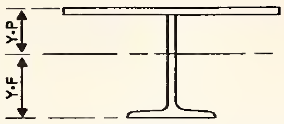
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
33 x 15 3/4 x 240 1-T	170.91	901.7	1,310.8	18,497.6	14.48	20.5	14.1	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	828.9	1,278.6	17,281.4	14.33	20.8	13.5	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	754.6	1,250.7	16,060.8	14.16	21.3	12.8	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	573.4	1,197.9	13,427.2	13.70	23.4	11.2	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	534.7	1,173.0	12,643.1	13.51	23.6	10.8	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	486.1	1,147.2	11,684.4	13.20	24.0	10.2	29.15	33.10	11.51	0.855	19.19
30 x 15 x 172 1-T	121.81	601.2	1,095.5	12,035.3	12.77	20.0	11.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	454.9	1,051.9	9,978.8	12.18	21.9	9.5	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	426.7	1,035.5	9,454.1	12.02	22.2	9.1	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	397.7	1,016.8	8,898.2	11.80	22.4	8.8	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	367.0	995.1	8,296.5	11.54	22.6	8.3	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 1-T	102.05	464.3	955.1	8,748.8	11.35	18.8	9.2	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 1-T	85.05	360.9	922.6	7,368.4	10.82	20.4	8.0	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	323.1	899.9	6,700.6	10.54	20.7	7.4	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	296.6	882.0	6,220.8	10.29	21.0	7.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 1-T	89.83	382.4	844.6	6,676.6	10.18	17.5	7.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	350.9	834.1	6,280.2	10.00	17.9	7.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	322.6	819.5	5,852.6	9.82	18.1	7.1	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	293.5	803.6	5,401.6	9.59	18.4	6.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	269.8	793.5	5,115.0	9.36	19.0	6.4	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	241.0	773.5	4,630.6	9.07	19.2	6.0	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	217.0	754.3	4,216.6	8.78	19.4	5.6	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 1-T	76.27	291.1	711.7	4,570.6	8.70	15.7	6.4	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 1-T	70.15	241.6	687.4	3,980.1	8.24	16.5	5.8	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	206.2	662.6	3,458.0	7.89	16.8	5.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	186.9	661.8	3,258.9	7.78	17.4	4.9	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	174.0	650.9	3,054.5	7.61	17.6	4.7	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	158.0	636.3	2,797.4	7.37	17.7	4.4	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	246.7	592.6	3,317.7	7.43	13.4	5.6	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 1-T	77.40	259.7	620.4	3,589.4	7.69	13.8	5.8	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	239.0	608.2	3,336.0	7.53	14.0	5.5	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	218.3	595.5	3,080.2	7.34	14.1	5.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	190.5	582.9	2,791.7	7.08	14.7	4.8	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	172.8	570.2	2,557.8	6.88	14.8	4.5	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	156.7	556.7	2,338.0	6.67	14.9	4.2	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	143.1	545.1	2,152.0	6.48	15.0	3.9	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 1-T	43.76	134.8	545.2	2,092.6	6.42	15.5	3.8	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	123.2	532.8	1,925.8	6.22	15.6	3.6	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	111.8	520.4	1,759.8	6.01	15.7	3.4	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	201.1	534.3	2,582.2	6.73	12.8	4.8	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	180.2	518.7	2,312.1	6.47	12.8	4.5	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	157.3	506.9	2,094.2	6.22	13.3	4.1	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	142.9	494.5	1,915.8	6.03	13.4	3.9	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	128.5	481.5	1,736.9	5.83	13.5	3.6	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	116.2	469.3	1,581.6	5.63	13.6	3.4	12.00	15.86	8.46	0.645	6.45



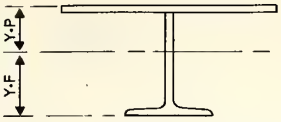
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
16 x 7 x 50 I-T	36.22	101.6	464.7	1,447.7	5.46	14.2	3.1	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	91.3	451.7	1,309.5	5.25	14.3	2.9	9.59	16.12	7.04	0.563	5.57
40 I-T	28.91	81.2	438.5	1,173.0	5.03	14.5	2.7	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	72.0	420.6	1,042.6	4.77	14.5	2.5	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	164.5	471.7	1,966.3	5.98	12.0	4.2	17.07	15.00	10.50	0.850	8.46
54 T	53.99	150.4	462.0	1,819.3	5.81	12.1	3.9	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	123.0	429.2	1,461.3	5.34	11.9	3.4	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	111.0	417.1	1,317.3	5.14	11.9	3.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	95.6	403.3	1,164.0	4.89	12.2	2.9	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	86.3	391.9	1,055.2	4.71	12.2	2.7	9.70	13.80	8.03	0.593	4.68
43 I-T	29.60	77.1	379.4	948.4	4.51	12.3	2.5	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 I-T	27.05	68.9	376.2	887.8	4.40	12.9	2.4	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	61.4	362.6	794.0	4.20	12.9	2.2	7.15	14.00	6.75	0.453	4.01
30 I-T	21.69	53.5	345.2	693.9	3.96	13.0	2.0	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	113.4	363.4	1,147.0	4.71	10.1	3.2	13.81	12.15	9.06	0.872	6.26
42 T	41.99	101.0	353.4	1,034.4	4.53	10.2	2.9	12.35	12.04	9.01	0.772	5.65
38 T	38.01	90.5	343.4	936.5	4.37	10.3	2.7	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	80.0	342.6	862.7	4.24	10.8	2.5	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	71.8	331.6	778.0	4.07	10.8	2.3	8.94	12.06	8.04	0.576	4.05
40 I-T	26.89	63.8	320.4	695.3	3.89	10.9	2.2	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 I-T	24.94	57.8	316.3	653.2	3.80	11.3	2.1	7.34	12.24	6.56	0.540	3.73
31 I-T	21.43	49.6	300.2	562.2	3.56	11.3	1.9	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	43.1	284.7	488.8	3.35	11.3	1.7	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 I-T	16.80	34.4	264.1	408.7	3.09	11.9	1.5	4.94	12.30	4.03	0.424	3.20
19 I-T	14.76	29.5	246.0	350.1	2.88	11.9	1.4	4.34	12.16	4.01	0.349	2.91
16.5 I-T	13.11	25.0	225.3	294.8	2.66	11.8	1.3	3.86	12.00	4.00	0.269	2.76
14 I-T	11.22	21.2	208.4	250.5	2.46	11.8	1.2	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	78.6	297.6	730.4	3.87	9.3	2.5	10.73	10.62	8.29	0.740	4.83
34 T	34.03	73.2	292.0	684.8	3.78	9.3	2.3	10.01	10.57	8.27	0.685	4.54
31 T	31.01	66.3	283.5	624.3	3.64	9.4	2.2	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 I-T	29.46	61.2	270.6	561.2	3.47	9.2	2.1	8.66	10.12	8.02	0.618	3.54
39 I-T	25.64	52.6	255.7	482.6	3.26	9.2	1.9	7.54	9.94	7.99	0.528	3.16
33 I-T	21.93	43.9	237.8	402.7	3.01	9.2	1.7	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 I-T	19.99	39.6	238.2	385.3	2.96	9.7	1.6	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	34.0	223.5	330.4	2.77	9.7	1.5	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	28.1	203.4	272.0	2.54	9.7	1.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 I-T	14.22	25.6	199.5	258.0	2.47	10.1	1.3	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	22.4	185.5	225.0	2.32	10.0	1.2	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	19.5	171.2	194.8	2.17	10.0	1.1	3.40	10.00	4.00	0.269	2.30
11.5 I-T	8.93	15.0	148.4	149.7	1.92	10.0	1.0	2.63	9.86	3.95	0.204	1.77
9 x 7 1/2 x 30 T	29.99	57.2	238.8	472.7	3.18	8.3	2.0	8.82	9.12	7.56	0.695	3.79
27.5 T	27.51	52.3	232.1	435.0	3.07	8.3	1.9	8.09	9.06	7.53	0.630	3.53
25 T	24.99	47.5	224.8	397.1	2.96	8.4	1.8	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	68.1	223.7	484.6	3.13	7.1	2.2	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	62.1	217.4	444.4	3.03	7.2	2.0	10.43	8.08	8.54	0.795	3.92
32 T	31.96	56.1	210.5	404.0	2.92	7.2	1.9	9.40	8.00	8.50	0.715	3.54
29 T	28.97	50.9	203.9	368.6	2.82	7.2	1.8	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	43.6	198.7	331.1	2.70	7.6	1.7	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	39.2	190.9	298.8	2.59	7.6	1.6	6.62	8.06	7.04	0.563	2.78
20 T	19.99	35.1	183.1	268.7	2.48	7.7	1.5	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.3	173.6	240.2	2.35	7.7	1.4	5.40	7.93	6.99	0.428	2.31

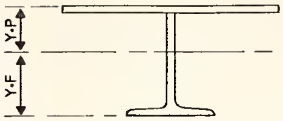


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 6 1/2 x 28 I-T	18.42	31.3	176.8	244.4	2.37	7.8	1.4	5.42	8.06	6.54	0.463	2.29
24 I-T	15.75	26.8	164.1	208.2	2.21	7.8	1.3	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 I-T	13.71	22.6	154.8	182.4	2.08	8.1	1.2	4.03	8.14	5.27	0.378	2.80
17 I-T	11.82	18.9	140.1	152.3	1.92	8.0	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 I-T	11.11	16.7	131.6	136.7	1.82	8.2	1.0	3.27	8.12	4.01	0.314	1.98
13 I-T	9.79	14.2	118.9	115.8	1.68	8.2	1.0	2.88	8.00	4.00	0.254	1.84
10 I-T	7.44	11.1	102.6	90.5	1.50	8.1	0.9	2.19	7.90	3.94	0.204	1.34
7 x 6 3/4 x 19 T	19.01	30.1	153.7	206.1	2.18	6.8	1.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	26.9	146.4	184.8	2.07	6.9	1.3	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.4	136.5	160.6	1.95	6.9	1.2	4.41	6.93	6.73	0.383	1.87
7 x 4 x 8.6 T	8.60	12.0	96.0	86.9	1.47	7.2	0.9	2.53	7.00	4.00	0.272	1.47
6 x 6 1/2 x 18 T	17.99	25.9	127.1	155.8	1.90	6.0	1.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	22.4	118.4	134.9	1.78	6.0	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	19.5	110.3	117.8	1.68	6.0	1.1	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 I-T	11.07	14.4	96.6	92.4	1.50	6.4	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	14.7	96.7	93.1	1.50	6.3	1.0	3.24	6.16	4.03	0.424	1.60
9.5 T	9.55	12.5	87.1	78.9	1.39	6.3	0.9	2.81	6.08	4.01	0.349	1.46
12 I-T	8.47	10.6	77.8	66.5	1.28	6.3	0.9	2.49	6.00	4.00	0.279	1.38
8.25 T	8.26	10.5	77.2	65.7	1.28	6.3	0.9	2.43	6.00	4.00	0.269	1.38
7 T	7.04	9.0	69.5	56.2	1.19	6.3	0.8	2.07	5.96	3.97	0.224	1.19
8.5 I-T	6.03	7.6	61.0	46.9	1.09	6.2	0.8	1.77	5.82	3.94	0.194	0.99
6 x 3 x 5.9 T	5.85	7.3	61.0	46.7	1.08	6.4	0.8	1.72	6.00	3.06	0.175	1.05

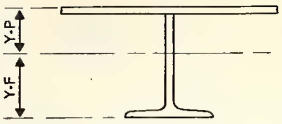


PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x16 1/2 x300 I-T	214.24	1,231.0	1,780.2	27,633.3	15.86	22.4	15.5	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,153.4	1,744.9	26,213.5	15.75	22.7	15.0	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,070.5	1,706.4	24,662.4	15.57	23.0	14.5	54.79	36.24	16.55	1.440	30.62
245 1-T	175.31	1,008.7	1,678.5	23,507.4	15.45	23.3	14.0	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	948.6	1,651.0	22,368.8	15.31	23.6	13.5	48.56	35.88	16.47	1.260	27.44
36 x12 x194 1-T	147.66	787.1	1,614.6	19,965.5	14.87	25.4	12.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	739.8	1,589.4	18,965.5	14.72	25.6	11.9	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	692.3	1,564.1	17,953.1	14.55	25.9	11.5	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	650.8	1,539.5	17,039.0	14.35	26.2	11.1	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	608.9	1,514.4	16,107.8	14.13	26.5	10.6	33.79	35.84	11.97	0.940	22.40
33 x15 3/4 x240 1-T	170.91	920.7	1,547.6	20,059.8	14.37	21.8	13.0	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	845.6	1,512.6	18,706.1	14.18	22.1	12.4	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	769.0	1,481.5	17,338.5	13.95	22.5	11.7	42.21	33.00	15.57	1.150	23.59
33 x11 1/2 x152 1-T	114.31	583.9	1,421.8	14,384.3	13.37	24.6	10.1	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	544.2	1,394.1	13,523.5	13.15	24.8	9.7	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	494.5	1,363.5	12,465.8	12.81	25.2	9.1	29.15	33.10	11.51	0.855	19.19
30 x15 x210 1-T	148.40	745.1	1,366.4	15,250.9	12.98	20.5	11.2	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	675.2	1,333.1	14,059.2	12.76	20.8	10.5	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	611.8	1,302.2	12,956.9	12.52	21.2	10.0	35.83	29.88	14.98	1.065	19.57
30 x10 1/2 x132 I-T	99.55	462.8	1,249.5	10,654.6	11.83	23.0	8.5	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	433.9	1,230.7	10,077.0	11.64	23.2	8.2	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	404.3	1,208.9	9,467.5	11.40	23.4	7.8	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	373.0	1,183.0	8,810.4	11.12	23.6	7.4	24.38	29.82	10.48	0.760	16.34
27 x14 x145 1-T	102.05	471.7	1,137.0	9,378.7	11.04	19.9	8.2	30.01	26.88	13.96	0.975	16.12
27 x10 x114 1-T	85.05	366.7	1,096.6	7,839.6	10.44	21.4	7.1	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	328.0	1,069.9	7,106.4	10.13	21.7	6.6	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	301.0	1,048.4	6,582.4	9.87	21.9	6.3	20.75	26.90	9.99	0.747	13.18
24 x14 x130 1-T	89.83	388.1	1,006.1	7,139.2	9.87	18.4	7.1	26.42	24.24	14.00	0.900	13.70
24 x12 x120 I-T	84.70	356.2	992.6	6,697.5	9.66	18.8	6.7	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	327.2	975.5	6,225.2	9.45	19.0	6.4	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	297.5	956.3	5,729.0	9.21	19.3	6.0	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 1-T	69.66	273.7	942.1	5,415.1	8.97	19.8	5.7	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	244.3	917.8	4,886.9	8.66	20.0	5.3	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	219.8	894.2	4,438.0	8.35	20.2	5.0	16.71	23.90	8.98	0.682	10.52
21 x 13 x112 1-T	76.27	295.1	846.8	4,869.7	8.38	16.5	5.8	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	245.2	814.7	4,220.5	7.91	17.2	5.2	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	209.1	784.4	3,650.4	7.52	17.5	4.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	189.3	782.4	3,428.7	7.39	18.1	4.4	15.87	21.24	8.29	0.740	9.66
68 1-T	50.40	176.3	768.7	3,207.5	7.21	18.2	4.2	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	159.9	750.1	2,930.5	6.96	18.3	3.9	13.54	20.98	8.24	0.615	8.39
18 x12 x 75 T	75.07	250.5	704.4	3,542.7	7.17	14.1	5.0	22.08	17.92	11.97	0.940	11.20
18 x11 3/4 x114 I-T	77.40	263.6	736.8	3,830.6	7.42	14.5	5.2	22.77	18.48	11.83	0.991	10.99
105 1-T	71.22	242.4	721.8	3,551.0	7.24	14.7	4.9	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	221.2	706.2	3,269.8	7.04	14.8	4.6	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 1-T	60.34	193.2	689.0	2,952.6	6.76	15.3	4.3	17.75	18.32	8.84	0.911	9.63
77 1-T	54.46	175.1	673.1	2,697.6	6.55	15.4	4.0	16.02	18.16	8.79	0.831	8.62
70 1-T	49.48	158.7	656.1	2,459.3	6.33	15.5	3.7	14.55	18.00	8.75	0.751	7.88
64 1-T	45.19	144.9	641.2	2,258.2	6.13	15.6	3.5	13.29	17.86	8.71	0.686	7.20

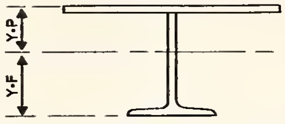


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 7 1/2 x 60 1-T	43.76	136.5	640.2	2,192.5	6.06	16.1	3.4	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	124.7	624.2	2,013.6	5.86	16.1	3.2	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	113.1	608.0	1,835.8	5.64	16.2	3.0	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	204.0	633.4	2,746.7	6.45	13.5	4.3	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	182.7	613.3	2,450.5	6.18	13.4	4.0	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 1-T	54.99	159.5	597.0	2,211.9	5.92	13.9	3.7	16.17	16.32	8.59	0.875	8.63
71 1-T	49.98	144.8	581.3	2,018.3	5.73	13.9	3.5	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	130.2	564.6	1,824.7	5.51	14.0	3.2	13.23	16.00	8.50	0.715	7.08
58 1-T	40.79	117.6	548.8	1,657.4	5.31	14.1	3.0	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	102.9	541.1	1,511.6	5.13	14.7	2.8	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	92.4	524.1	1,364.2	4.92	14.8	2.6	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	82.1	506.5	1,218.9	4.69	14.8	2.4	8.50	16.00	7.00	0.503	4.91
36 1-T	26.45	72.8	483.4	1,081.6	4.45	14.9	2.2	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	166.8	557.2	2,086.4	5.71	12.5	3.7	17.07	15.00	10.50	0.850	8.46
54 T	53.99	152.5	544.5	1,925.7	5.54	12.6	3.5	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 1-T	45.24	124.6	503.0	1,539.0	5.06	12.4	3.1	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	112.4	487.2	1,383.3	4.85	12.3	2.8	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 1-T	36.44	96.8	468.6	1,218.4	4.60	12.6	2.6	10.72	13.94	8.06	0.658	5.15
48 1-T	32.98	87.3	453.5	1,101.9	4.41	12.6	2.4	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	78.0	437.1	988.2	4.22	12.7	2.3	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	69.8	431.5	922.9	4.10	13.2	2.1	7.96	14.12	6.78	0.513	4.41
34 1-T	24.30	62.1	413.6	823.8	3.90	13.3	2.0	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	54.1	391.1	718.6	3.67	13.3	1.8	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	115.0	425.5	1,213.4	4.47	10.5	2.9	13.81	12.15	9.06	0.872	6.26
42 T	41.99	102.5	412.1	1,090.8	4.29	10.6	2.6	12.35	12.04	9.01	0.772	5.65
38 T	38.01	91.8	398.9	984.8	4.12	10.7	2.5	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	81.0	395.4	903.2	3.99	11.1	2.3	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	72.7	381.0	812.7	3.82	11.2	2.1	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	64.6	366.0	724.6	3.64	11.2	2.0	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	58.6	359.7	679.5	3.54	11.6	1.9	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	50.3	338.7	583.5	3.31	11.6	1.7	6.30	12.08	6.52	0.465	3.20
27 1-T	18.80	43.7	318.6	506.4	3.11	11.6	1.6	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	34.9	292.3	422.8	2.86	12.1	1.4	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	30.0	269.8	361.8	2.66	12.1	1.3	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	25.4	244.8	304.7	2.45	12.0	1.2	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	21.6	224.0	258.7	2.27	12.0	1.2	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	79.8	344.0	768.8	3.65	9.6	2.2	10.73	10.62	8.29	0.740	4.83
34 T	34.03	74.3	336.4	719.7	3.56	9.7	2.1	10.01	10.57	8.27	0.685	4.54
31 T	31.01	67.3	325.1	654.7	3.42	9.7	2.0	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	62.1	308.9	587.9	3.25	9.5	1.9	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	53.4	289.7	504.3	3.04	9.4	1.7	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	44.6	266.7	419.8	2.81	9.4	1.6	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	40.2	265.7	400.8	2.76	10.0	1.5	5.88	10.22	5.80	0.500	2.95
25 1-T	17.19	34.5	247.0	343.2	2.57	9.9	1.4	5.06	10.08	5.76	0.430	2.54
21 1-T	14.79	28.6	222.3	282.3	2.35	9.9	1.3	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	26.1	217.0	267.6	2.29	10.3	1.2	4.18	10.24	4.02	0.394	2.56
17 1-T	12.81	22.9	200.3	233.3	2.15	10.2	1.2	3.77	10.12	4.01	0.329	2.42
15 1-T	11.55	19.9	183.4	202.1	2.01	10.1	1.1	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	58.1	272.3	496.9	2.99	8.5	1.8	8.82	9.12	7.56	0.695	3.79



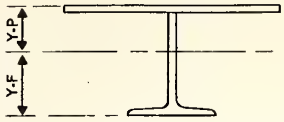
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	53.2	263.4	456.4	2.88	8.6	1.7	8.09	9.06	7.53	0.630	3.53
25 T	24.99	48.3	253.7	416.0	2.77	8.6	1.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	69.3	257.7	514.1	2.97	7.4	2.0	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	63.2	249.3	470.4	2.87	7.4	1.9	10.43	8.08	8.54	0.795	3.92
32 T	31.96	57.1	240.1	426.6	2.75	7.5	1.8	9.40	8.00	8.50	0.715	3.54
29 T	28.97	51.8	231.3	388.5	2.65	7.5	1.7	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	44.4	223.6	347.7	2.53	7.8	1.6	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	40.0	213.4	313.3	2.42	7.8	1.5	6.62	8.06	7.04	0.563	2.78
20 T	19.99	35.8	203.3	281.2	2.31	7.9	1.4	5.88	8.00	7.00	0.503	2.45
18 T	18.36	31.9	191.4	251.3	2.19	7.9	1.3	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	31.9	194.8	255.5	2.21	8.0	1.3	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	27.3	179.0	217.5	2.05	8.0	1.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	23.1	167.3	190.3	1.93	8.3	1.1	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	19.4	149.9	159.0	1.78	8.2	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	17.1	139.9	142.8	1.69	8.3	1.0	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	30.8	169.5	216.5	2.03	7.0	1.3	5.59	7.06	6.78	0.513	2.20
17 T	17.00	27.6	160.2	193.9	1.93	7.0	1.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	23.9	148.1	168.5	1.81	7.0	1.1	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	26.6	139.2	164.4	1.78	6.2	1.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	23.0	128.5	142.3	1.66	6.2	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	20.1	118.7	124.3	1.56	6.2	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	14.9	102.4	97.6	1.40	6.5	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.2	102.6	98.3	1.40	6.5	1.0	3.24	6.16	4.03	0.424	1.60

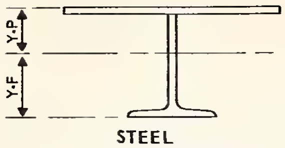


PROPERTIES OF
COMBINED BEAM AND PLATE
I-T AND T

30t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,254.6	2,065.6	29,734.8	15.76	23.7	14.4	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,174.7	2,028.0	28,173.2	15.62	24.0	13.9	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,089.8	1,986.0	26,467.7	15.41	24.3	13.3	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,026.2	1,955.7	25,196.0	15.26	24.6	12.9	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	964.6	1,925.6	23,942.6	15.08	24.8	12.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	800.9	1,881.4	21,264.8	14.57	26.6	11.3	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	752.2	1,853.8	20,170.0	14.39	26.8	10.9	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	703.5	1,826.0	19,062.1	14.19	27.1	10.4	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	661.1	1,798.2	18,065.9	13.97	27.3	10.0	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	618.3	1,769.7	17,051.8	13.73	27.6	9.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	936.6	1,803.6	21,500.2	14.18	23.0	11.9	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	859.6	1,765.1	20,009.6	13.94	23.3	11.3	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	781.1	1,730.1	18,498.2	13.68	23.7	10.7	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	592.7	1,661.5	15,236.0	12.99	25.7	9.2	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	552.2	1,630.3	14,302.5	12.74	25.9	8.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	501.6	1,594.1	13,153.3	12.38	26.2	8.3	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	757.1	1,595.5	16,305.2	12.75	21.5	10.2	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	685.5	1,558.4	14,993.7	12.49	21.9	9.6	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	620.6	1,523.5	13,782.6	12.20	22.2	9.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	469.4	1,459.6	11,250.6	11.44	24.0	7.7	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	440.0	1,437.8	10,623.7	11.23	24.1	7.4	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	409.8	1,412.1	9,965.0	10.98	24.3	7.1	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	378.0	1,381.4	9,257.7	10.69	24.5	6.7	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	478.0	1,330.2	9,935.9	10.70	20.8	7.5	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	371.5	1,280.0	8,251.1	10.05	22.2	6.4	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	332.1	1,248.2	7,458.2	9.71	22.5	6.0	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	304.6	1,222.3	6,894.4	9.44	22.6	5.6	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	393.0	1,176.4	7,545.4	9.53	19.2	6.4	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	360.6	1,159.3	7,062.5	9.30	19.6	6.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	331.0	1,138.9	6,549.2	9.08	19.8	5.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	300.8	1,115.6	6,012.1	8.81	20.0	5.4	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	277.1	1,096.5	5,674.8	8.57	20.5	5.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	247.1	1,066.9	5,107.3	8.25	20.7	4.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	222.3	1,037.8	4,627.7	7.94	20.8	4.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	298.6	987.7	5,130.5	8.05	17.2	5.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	248.4	946.3	4,429.6	7.57	17.8	4.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	211.6	909.0	3,816.5	7.17	18.0	4.2	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	191.5	905.0	3,574.5	7.02	18.7	3.9	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	178.2	887.8	3,338.8	6.83	18.7	3.8	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	161.6	864.4	3,044.3	6.58	18.8	3.5	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	253.8	820.1	3,739.7	6.89	14.7	4.6	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	267.0	857.5	4,042.0	7.13	15.1	4.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	245.3	839.2	3,738.7	6.94	15.2	4.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	223.8	819.8	3,434.6	6.73	15.3	4.2	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	195.5	797.1	3,092.3	6.44	15.8	3.9	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	177.2	777.1	2,818.4	6.23	15.9	3.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	160.4	755.6	2,563.9	6.00	16.0	3.4	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	146.4	736.6	2,349.6	5.79	16.0	3.2	13.29	17.86	8.71	0.686	7.20

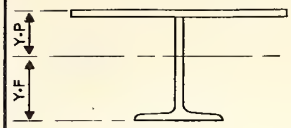


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 1-T	43.76	138.0	734.2	2,278.5	5.72	16.5	3.1	12.87	18.24	7.56	0.695	7.59
55 1-T	40.26	126.1	713.9	2,089.2	5.52	16.6	2.9	11.84	18.12	7.53	0.630	7.06
50 1-T	36.58	114.3	693.1	1,901.3	5.31	16.6	2.7	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	206.6	734.8	2,890.3	6.17	14.0	3.9	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 1-T	59.02	184.8	709.1	2,570.9	5.89	13.9	3.6	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	161.5	687.5	2,314.3	5.64	14.3	3.4	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	146.5	667.8	2,107.2	5.43	14.4	3.2	14.70	16.16	8.54	0.795	7.85
64 1-T	44.99	131.7	646.6	1,900.8	5.21	14.4	2.9	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	119.0	626.4	1,723.1	5.01	14.5	2.8	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 1-T	36.22	104.0	614.6	1,567.0	4.82	15.1	2.5	10.65	16.24	7.07	0.628	6.17
45 1-T	32.62	93.4	592.9	1,411.7	4.61	15.1	2.4	9.59	16.12	7.04	0.563	5.57
40 1-T	28.91	83.0	570.0	1,259.0	4.39	15.2	2.2	8.50	16.00	7.00	0.503	4.91
36 I-T	26.45	73.6	541.1	1,115.8	4.16	15.2	2.1	7.78	15.84	6.99	0.428	4.73
15 x 10 1/2 x 58 T	58.04	169.0	643.4	2,191.4	5.45	13.0	3.4	17.07	15.00	10.50	0.850	8.46
54 T	53.99	154.5	627.1	2,018.4	5.27	13.1	3.2	15.88	14.91	10.48	0.760	8.17
14 x 10 x 68 I-T	45.24	126.1	575.4	1,606.8	4.79	12.7	2.8	13.31	14.16	10.04	0.718	5.87
61 1-T	40.54	113.6	555.1	1,440.9	4.58	12.7	2.6	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	97.9	530.8	1,265.9	4.33	12.9	2.4	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	88.3	511.5	1,143.0	4.15	12.9	2.2	9.70	13.80	8.03	0.593	4.68
43 1-T	29.60	78.9	490.5	1,023.2	3.96	13.0	2.1	8.70	13.68	8.00	0.528	4.21
14 x 6 3/4 x 38 1-T	27.05	70.6	482.0	954.0	3.84	13.5	2.0	7.96	14.12	6.78	0.513	4.41
34 I-T	24.30	62.9	459.5	850.3	3.65	13.5	1.9	7.15	14.00	6.75	0.453	4.01
30 1-T	21.69	54.8	431.4	740.9	3.43	13.5	1.7	6.38	13.86	6.73	0.383	3.74
12 x 9 x 47 T	46.95	116.6	486.1	1,271.7	4.25	10.9	2.6	13.81	12.15	9.06	0.872	6.26
42 T	41.99	103.8	468.8	1,140.4	4.06	11.0	2.4	12.35	12.04	9.01	0.772	5.65
38 T	38.01	93.0	451.6	1,027.4	3.89	11.1	2.3	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 1-T	33.81	82.1	444.8	939.2	3.75	11.4	2.1	9.94	12.18	8.08	0.641	4.52
45 1-T	30.39	73.6	426.4	843.7	3.59	11.5	2.0	8.94	12.06	8.04	0.576	4.05
40 1-T	26.89	65.5	407.2	750.9	3.41	11.5	1.8	7.91	11.94	8.00	0.516	3.51
12 x 6 1/2 x 36 1-T	24.94	59.3	398.5	703.2	3.31	11.9	1.8	7.34	12.24	6.56	0.540	3.73
31 1-T	21.43	50.9	372.1	602.9	3.09	11.8	1.6	6.30	12.08	6.52	0.465	3.20
27 I-T	18.80	44.3	347.3	522.7	2.90	11.8	1.5	5.53	11.94	6.50	0.400	2.86
12 x 4 x 22 1-T	16.80	35.5	315.3	436.1	2.66	12.3	1.4	4.94	12.30	4.03	0.424	3.20
19 1-T	14.76	30.5	288.7	373.1	2.47	12.2	1.3	4.34	12.16	4.01	0.349	2.91
16.5 1-T	13.11	25.8	259.7	314.3	2.28	12.2	1.2	3.86	12.00	4.00	0.269	2.76
14 1-T	11.22	22.0	235.4	267.0	2.11	12.1	1.1	3.30	11.90	3.97	0.224	2.38
10 1/2 x 8 1/4 x 36.5 T	36.48	81.0	387.5	803.2	3.45	9.9	2.1	10.73	10.62	8.29	0.740	4.83
34 T	34.03	75.4	377.7	750.9	3.36	10.0	2.0	10.01	10.57	8.27	0.685	4.54
31 T	31.01	68.3	363.3	682.0	3.22	10.0	1.9	9.12	10.49	8.24	0.615	4.19
10 x 8 x 45 1-T	29.46	63.0	343.5	612.1	3.06	9.7	1.8	8.66	10.12	8.02	0.618	3.54
39 1-T	25.64	54.2	319.6	524.2	2.86	9.7	1.6	7.54	9.94	7.99	0.528	3.16
33 1-T	21.93	45.3	291.5	435.9	2.63	9.6	1.5	6.45	9.74	7.96	0.433	2.84
10 x 5 3/4 x 29 1-T	19.99	40.9	288.8	415.4	2.58	10.2	1.4	5.88	10.22	5.80	0.500	2.95
25 I-T	17.19	35.1	266.1	355.4	2.40	10.1	1.3	5.06	10.08	5.76	0.430	2.54
21 I-T	14.79	29.1	237.1	292.4	2.19	10.0	1.2	4.35	9.90	5.75	0.340	2.37
10 x 4 x 19 1-T	14.22	26.6	230.6	277.1	2.13	10.4	1.2	4.18	10.24	4.02	0.394	2.56
17 I-T	12.81	23.4	211.4	241.8	2.00	10.4	1.1	3.77	10.12	4.01	0.329	2.42
15 I-T	11.55	20.4	192.3	209.6	1.87	10.3	1.1	3.40	10.00	4.00	0.269	2.30
9 x 7 1/2 x 30 T	29.99	59.1	302.5	519.0	2.81	8.8	1.7	8.82	9.12	7.56	0.695	3.79



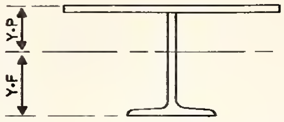
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
9 x 7 1/2 x 27.5 T	27.51	54.1	291.2	476.1	2.71	8.8	1.6	8.09	9.06	7.53	0.630	3.53
25 T	24.99	49.1	279.0	433.5	2.60	8.8	1.6	7.35	9.00	7.50	0.570	3.22
8 x 8 1/2 x 39 T	38.96	70.6	289.2	541.1	2.82	7.7	1.9	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	64.4	278.5	494.3	2.71	7.7	1.8	10.43	8.08	8.54	0.795	3.92
32 T	31.96	58.1	266.9	447.5	2.60	7.7	1.7	9.40	8.00	8.50	0.715	3.54
29 T	28.97	52.8	255.8	407.0	2.50	7.7	1.6	8.52	7.93	8.46	0.645	3.22
8 x 7 x 25 T	24.99	45.3	245.1	363.4	2.38	8.0	1.5	7.35	8.13	7.07	0.628	3.08
22.5 T	22.51	40.7	232.6	327.1	2.27	8.0	1.4	6.62	8.06	7.04	0.563	2.78
20 T	19.99	36.5	220.1	293.4	2.17	8.0	1.3	5.88	8.00	7.00	0.503	2.45
18 T	18.36	32.6	206.1	262.1	2.05	8.0	1.3	5.40	7.93	6.99	0.428	2.31
8 x 6 1/2 x 28 1-T	18.42	32.6	209.6	266.4	2.07	8.2	1.3	5.42	8.06	6.54	0.463	2.29
24 1-T	15.75	28.0	190.9	226.7	1.92	8.1	1.2	4.63	7.92	6.50	0.398	1.92
8 x 5 1/4 x 20 1-T	13.71	23.6	176.9	198.4	1.81	8.4	1.1	4.03	8.14	5.27	0.378	2.80
17 1-T	11.82	19.9	157.2	166.0	1.66	8.3	1.1	3.48	8.00	5.25	0.308	1.92
8 x 4 x 15 1-T	11.11	17.6	146.1	149.2	1.58	8.5	1.0	3.27	8.12	4.01	0.314	1.98
7 x 6 3/4 x 19 T	19.01	31.5	182.5	226.8	1.91	7.2	1.2	5.59	7.06	6.78	0.513	2.20
17 T	17.00	28.2	171.4	203.1	1.81	7.2	1.2	5.00	7.00	6.75	0.453	2.00
15 T	14.99	24.6	157.3	176.6	1.70	7.2	1.1	4.41	6.93	6.73	0.383	1.87
6 x 6 1/2 x 18 T	17.99	27.3	149.1	173.1	1.67	6.3	1.2	5.29	6.12	6.56	0.560	1.86
15.5 T	15.50	23.7	136.6	150.0	1.56	6.3	1.1	4.56	6.04	6.52	0.465	1.60
13.5 T	13.53	20.8	125.4	131.1	1.47	6.3	1.0	3.98	5.98	6.50	0.400	1.43
6 x 4 x 16 1-T	11.07	15.5	107.0	103.3	1.31	6.6	1.0	3.26	6.24	4.03	0.404	1.62
11 T	11.02	15.9	107.3	104.1	1.32	6.6	1.0	3.24	6.16	4.03	0.424	1.60



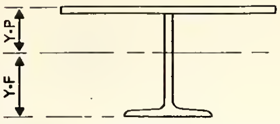
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,275.1	2,374.3	31,706.2	15.59	24.9	13.4	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,193.1	2,334.0	30,000.9	15.42	25.1	12.9	58.73	36.50	16.59	1.570	32.30
260 1-T	186.30	1,106.3	2,287.7	28,141.9	15.17	25.4	12.3	54.79	36.24	16.55	1.440	30.62
245 1-T	175.31	1,041.3	2,254.6	26,754.0	14.99	25.7	11.9	51.56	36.06	16.51	1.350	28.92
230 1-T	165.10	978.3	2,221.3	25,387.7	14.79	26.0	11.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	812.6	2,167.6	22,448.0	14.23	27.6	10.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	762.8	2,137.0	21,261.3	14.02	27.9	9.9	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	713.1	2,106.0	20,061.7	13.79	28.1	9.5	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	669.8	2,074.4	18,987.7	13.55	28.3	9.2	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	626.3	2,041.8	17,895.6	13.29	28.6	8.8	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	950.4	2,079.1	22,827.9	13.92	24.0	11.0	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	871.6	2,036.2	21,203.1	13.66	24.3	10.4	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	791.4	1,996.5	19,552.7	13.35	24.7	9.8	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	600.2	1,916.5	15,997.8	12.58	26.7	8.3	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	559.0	1,881.1	14,996.0	12.32	26.8	8.0	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	507.6	1,838.1	13,762.7	11.93	27.1	7.5	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	767.5	1,840.8	17,267.6	12.46	22.5	9.4	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	694.3	1,799.0	15,840.2	12.17	22.8	8.8	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	628.2	1,759.1	14,525.3	11.86	23.1	8.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	475.1	1,681.4	11,779.9	11.03	24.8	7.0	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	445.1	1,655.9	11,107.5	10.81	25.0	6.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	414.5	1,625.5	10,403.9	10.55	25.1	6.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	382.3	1,588.9	9,651.0	10.25	25.2	6.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	483.4	1,534.2	10,432.3	10.34	21.6	6.8	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	375.7	1,471.6	8,614.1	9.65	22.9	5.9	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	335.6	1,433.5	7,766.9	9.29	23.1	5.4	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	307.8	1,402.2	7,167.4	9.01	23.3	5.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	397.2	1,354.7	7,905.3	9.17	19.9	5.8	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	364.5	1,333.1	7,385.2	8.94	20.3	5.5	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	334.4	1,308.4	6,834.3	8.70	20.4	5.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	303.8	1,280.0	6,260.2	8.42	20.6	4.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	280.0	1,255.5	5,902.6	8.19	21.1	4.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	249.6	1,219.2	5,300.0	7.86	21.2	4.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	224.5	1,183.4	4,793.1	7.54	21.3	4.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	301.7	1,133.0	5,360.8	7.72	17.8	4.7	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	251.2	1,080.9	4,614.0	7.24	18.4	4.3	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	213.8	1,035.0	3,962.3	6.82	18.5	3.8	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	193.4	1,027.9	3,702.3	6.66	19.1	3.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	180.0	1,006.5	3,453.7	6.48	19.2	3.4	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	163.2	977.2	3,144.0	6.23	19.3	3.2	13.54	20.98	8.24	0.615	8.39
18 x 12 x 75 T	75.07	256.7	938.5	3,914.7	6.61	15.2	4.2	22.08	17.92	11.97	0.940	11.20
18 x 11 3/4 x 114 I-T	77.40	269.9	981.3	4,229.8	6.85	15.7	4.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	248.0	958.9	3,905.0	6.64	15.7	4.1	20.95	18.32	11.79	0.911	10.14
96 1-T	65.10	226.2	934.9	3,580.2	6.43	15.8	3.8	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	197.7	905.7	3,215.7	6.14	16.3	3.6	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	179.0	880.7	2,925.0	5.92	16.3	3.3	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	162.1	853.9	2,656.2	5.69	16.4	3.1	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	147.9	830.0	2,430.2	5.48	16.4	2.9	13.29	17.86	8.71	0.686	7.20



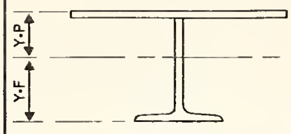
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 7 1/2 x 60 I-T	43.76	139.4	825.8	2,354.5	5.41	16.9	2.9	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	127.4	800.5	2,156.0	5.21	16.9	2.7	11.84	18.12	7.53	0.630	7.06
50 I-T	36.58	115.5	774.3	1,959.3	5.00	17.0	2.5	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	208.9	837.0	3,017.7	5.90	14.4	3.6	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 96 I-T	64.24	204.8	828.4	2,926.2	5.82	14.3	3.5	18.89	16.32	11.53	0.875	8.73
88 I-T	59.02	186.8	804.9	2,677.6	5.62	14.3	3.3	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	163.3	777.2	2,405.2	5.36	14.7	3.1	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	148.2	752.6	2,186.2	5.16	14.8	2.9	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	133.1	726.1	1,968.5	4.94	14.8	2.7	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	120.2	700.8	1,781.7	4.73	14.8	2.5	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	105.1	684.1	1,616.6	4.55	15.4	2.4	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	94.4	656.9	1,454.4	4.34	15.4	2.2	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	127.5	645.3	1,667.4	4.54	13.1	2.6	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	114.9	619.8	1,492.6	4.34	13.0	2.4	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	99.0	589.2	1,308.9	4.09	13.2	2.2	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	89.3	565.1	1,180.2	3.91	13.2	2.1	9.70	13.80	8.03	0.593	4.68
12 x 10 x 53 I-T	34.55	88.6	500.7	1,020.7	3.63	11.5	2.0	10.16	12.06	10.00	0.576	4.16
12 x 9 x 47 T	46.95	118.1	544.3	1,324.5	4.04	11.2	2.4	13.81	12.15	9.06	0.872	6.26
42 T	41.99	105.2	522.4	1,185.3	3.85	11.3	2.3	12.35	12.04	9.01	0.772	5.65
38 T	38.01	94.2	501.0	1,066.2	3.68	11.3	2.1	11.18	11.95	8.98	0.682	5.26
12 x 8 x 50 I-T	33.81	83.1	490.1	972.1	3.54	11.7	2.0	9.94	12.18	8.08	0.641	4.52
45 I-T	30.39	74.6	467.5	872.2	3.38	11.7	1.9	8.94	12.06	8.04	0.576	4.05
10 1/2 x 8 1/4 x 36.5 T	36.48	82.1	427.5	834.9	3.27	10.2	2.0	10.73	10.62	8.29	0.740	4.83
34 T	34.03	76.5	415.4	779.8	3.17	10.2	1.9	10.01	10.57	8.27	0.685	4.54
31 T	31.01	69.3	397.6	707.5	3.04	10.2	1.8	9.12	10.49	8.24	0.615	4.19
9 x 8 3/4 x 35 T	34.95	71.3	349.6	622.1	2.83	8.7	1.8	10.28	9.00	8.75	0.751	3.94
32 T	31.96	65.4	336.4	571.3	2.73	8.7	1.7	9.40	8.94	8.71	0.686	3.60
8 x 8 1/2 x 39 T	38.96	71.9	318.2	566.5	2.68	7.9	1.8	11.46	8.16	8.59	0.875	4.31
35.5 T	35.46	65.6	305.0	516.9	2.58	7.9	1.7	10.43	8.08	8.54	0.795	3.92
32 T	31.96	59.2	290.8	467.6	2.47	7.9	1.6	9.40	8.00	8.50	0.715	3.54

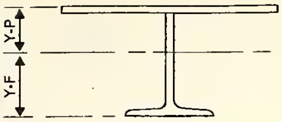


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,308.3	3,050.8	35,224.1	15.08	26.9	11.5	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,222.8	3,002.9	33,238.3	14.86	27.2	11.1	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,133.0	2,945.6	31,086.4	14.56	27.4	10.6	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,065.6	2,904.9	29,477.6	14.34	27.7	10.1	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,000.5	2,863.3	27,899.1	14.09	27.9	9.7	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	831.7	2,785.2	24,484.4	13.45	29.4	8.8	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	780.1	2,746.5	23,128.4	13.21	29.6	8.4	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	728.5	2,706.7	21,761.5	12.95	29.9	8.0	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	684.0	2,665.0	20,548.0	12.68	30.0	7.7	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	639.2	2,621.5	19,317.2	12.40	30.2	7.4	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	972.6	2,676.8	25,147.2	13.30	25.9	9.4	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	891.1	2,622.5	23,271.3	12.98	26.1	8.9	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	808.2	2,569.8	21,365.1	12.62	26.4	8.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	612.5	2,458.4	17,283.3	11.74	28.2	7.0	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	570.0	2,411.9	16,160.0	11.45	28.3	6.7	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	517.5	2,351.6	14,781.0	11.05	28.6	6.3	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	784.3	2,368.2	18,930.5	11.82	24.1	8.0	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	708.7	2,313.7	17,290.2	11.47	24.4	7.5	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	640.6	2,260.4	15,787.6	11.12	24.6	7.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	484.5	2,146.1	12,667.9	10.23	26.1	5.9	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	453.7	2,110.8	11,916.1	9.99	26.3	5.6	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	422.3	2,068.3	11,135.1	9.72	26.4	5.4	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	389.4	2,017.0	10,304.8	9.41	26.5	5.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	492.4	1,961.1	11,268.3	9.61	22.9	5.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	382.8	1,866.1	9,220.5	8.88	24.1	4.9	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	341.6	1,811.1	8,280.2	8.51	24.2	4.6	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	313.1	1,765.8	7,620.3	8.23	24.3	4.3	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	404.3	1,722.5	8,509.6	8.48	21.0	4.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	371.1	1,689.3	7,925.8	8.24	21.4	4.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	340.2	1,653.1	7,310.4	7.98	21.5	4.4	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	308.8	1,610.9	6,673.2	7.70	21.6	4.1	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	285.1	1,573.8	6,282.7	7.48	22.0	4.0	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	254.0	1,520.2	5,621.1	7.14	22.1	3.7	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	228.4	1,467.6	5,068.8	6.83	22.2	3.5	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	307.1	1,425.6	5,747.8	7.09	18.7	4.0	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	256.0	1,347.7	4,924.8	6.62	19.2	3.7	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	217.8	1,279.7	4,207.9	6.20	19.3	3.3	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	196.9	1,263.7	3,917.3	6.03	19.9	3.1	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	183.2	1,231.7	3,647.4	5.85	19.9	3.0	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	166.1	1,188.3	3,312.6	5.61	19.9	2.8	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	275.2	1,228.3	4,548.6	6.30	16.5	3.7	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	252.7	1,195.2	4,186.9	6.09	16.6	3.5	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	230.4	1,159.7	3,826.9	5.87	16.6	3.3	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	201.5	1,114.6	3,425.4	5.59	17.0	3.1	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	182.5	1,077.2	3,106.5	5.37	17.0	2.9	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	165.1	1,037.5	2,813.7	5.14	17.0	2.7	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	150.7	1,001.7	2,568.5	4.94	17.0	2.6	13.29	17.86	8.71	0.686	7.20
18 x 7 1/2 x 60 I-T	43.76	142.1	993.0	2,485.1	4.87	17.5	2.5	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	129.8	956.1	2,271.6	4.68	17.5	2.4	11.84	18.12	7.53	0.630	7.06



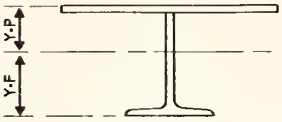
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 7 1/2 x 50 I-T	36.58	117.7	917.5	2,060.4	4.48	17.5	2.2	10.76	18.00	7.50	0.570	6.44
16 1/2 x 11 1/2 x 65 T	65.04	213.2	1,035.2	3,235.0	5.40	15.2	3.1	19.13	16.55	11.51	0.855	9.59
16 x 11 1/2 x 88 I-T	59.02	190.5	987.5	2,860.4	5.12	15.0	2.9	17.36	16.16	11.50	0.795	8.14
16 x 8 1/2 x 78 I-T	54.99	166.8	945.4	2,561.7	4.87	15.4	2.7	16.17	16.32	8.59	0.875	8.63
71 I-T	49.98	151.3	909.3	2,322.7	4.67	15.4	2.6	14.70	16.16	8.54	0.795	7.85
64 I-T	44.99	135.9	870.2	2,086.1	4.45	15.4	2.4	13.23	16.00	8.50	0.715	7.08
58 I-T	40.79	122.8	833.2	1,884.1	4.26	15.3	2.3	12.00	15.86	8.46	0.645	6.45
16 x 7 x 50 I-T	36.22	107.4	804.7	1,704.2	4.08	15.9	2.1	10.65	16.24	7.07	0.628	6.17
45 I-T	32.62	96.4	765.6	1,530.6	3.88	15.9	2.0	9.59	16.12	7.04	0.563	5.57
14 x 10 x 68 I-T	45.24	130.3	771.3	1,773.7	4.11	13.6	2.3	13.31	14.16	10.04	0.718	5.87
61 I-T	40.54	117.4	734.0	1,583.9	3.91	13.5	2.2	11.92	13.90	10.00	0.643	5.25
14 x 8 x 53 I-T	36.44	101.3	689.5	1,385.8	3.68	13.7	2.0	10.72	13.94	8.06	0.658	5.15
48 I-T	32.98	91.4	655.2	1,247.7	3.50	13.6	1.9	9.70	13.80	8.03	0.593	4.68



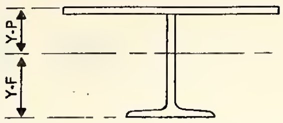
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

30t

81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,334.3	3,794.1	38,222.7	14.45	28.6	10.1	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,246.2	3,735.6	35,975.7	14.19	28.9	9.6	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,154.0	3,663.4	33,557.9	13.86	29.1	9.2	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,084.7	3,612.0	31,749.0	13.60	29.3	8.8	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,017.9	3,558.6	29,981.0	13.34	29.5	8.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	846.7	3,447.7	26,157.1	12.65	30.9	7.6	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	793.7	3,397.3	24,653.3	12.39	31.1	7.3	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	740.8	3,344.6	23,141.8	12.10	31.2	6.9	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	695.3	3,289.2	21,810.0	11.83	31.4	6.6	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	649.5	3,230.8	20,462.5	11.53	31.5	6.3	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	990.2	3,323.2	27,081.9	12.61	27.4	8.1	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	906.5	3,253.0	24,982.7	12.26	27.6	7.7	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	821.5	3,182.2	22,853.1	11.87	27.8	7.2	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	622.2	3,025.5	18,321.6	10.92	29.4	6.1	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	578.9	2,963.6	17,096.3	10.63	29.5	5.8	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	525.4	2,880.6	15,597.7	10.23	29.7	5.4	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	797.8	2,930.6	20,304.6	11.14	25.5	6.9	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	720.3	2,858.1	18,478.6	10.76	25.7	6.5	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	650.6	2,786.1	16,815.0	10.39	25.8	6.0	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	492.2	2,621.8	13,384.2	9.47	27.2	5.1	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	460.7	2,572.9	12,566.8	9.23	27.3	4.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	428.8	2,514.5	11,722.8	8.96	27.3	4.7	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	395.4	2,444.5	10,829.9	8.66	27.4	4.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	499.9	2,397.5	11,946.2	8.92	23.9	5.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	388.7	2,258.8	9,710.5	8.18	25.0	4.3	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	346.8	2,181.0	8,694.5	7.81	25.1	4.0	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	317.8	2,117.5	7,986.1	7.53	25.1	3.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	410.4	2,089.7	9,000.6	7.84	21.9	4.3	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	376.8	2,041.5	8,365.1	7.60	22.2	4.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	345.3	1,989.6	7,696.9	7.34	22.3	3.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	313.3	1,929.3	7,008.7	7.06	22.4	3.6	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	289.6	1,877.6	6,592.9	6.85	22.8	3.5	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	257.9	1,801.9	5,883.9	6.52	22.8	3.3	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	231.9	1,728.6	5,295.6	6.22	22.8	3.1	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	311.9	1,707.1	6,065.6	6.53	19.4	3.6	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	260.4	1,598.5	5,182.1	6.07	19.9	3.2	20.63	21.14	9.04	0.935	12.15
82 I-T	59.86	221.5	1,503.0	4,412.6	5.66	19.9	2.9	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 I-T	53.96	200.3	1,474.5	4,097.4	5.49	20.5	2.8	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	186.3	1,430.0	3,810.6	5.32	20.5	2.7	14.82	21.12	8.27	0.685	9.08
62 I-T	46.04	168.9	1,370.0	3,455.9	5.09	20.5	2.5	13.54	20.98	8.24	0.615	8.39
18 x 11 3/4 x 114 I-T	77.40	280.1	1,462.9	4,814.2	5.81	17.2	3.3	22.77	18.48	11.83	0.991	10.99
105 I-T	71.22	257.1	1,416.4	4,422.3	5.60	17.2	3.1	20.95	18.32	11.79	0.911	10.14
96 I-T	65.10	234.4	1,366.4	4,033.7	5.38	17.2	3.0	19.15	18.16	11.75	0.831	9.29
18 x 8 3/4 x 85 I-T	60.34	205.2	1,302.8	3,602.8	5.11	17.6	2.8	17.75	18.32	8.84	0.911	9.63
77 I-T	54.46	185.8	1,250.3	3,261.1	4.90	17.6	2.6	16.02	18.16	8.79	0.831	8.62
70 I-T	49.48	168.2	1,195.6	2,949.1	4.68	17.5	2.5	14.55	18.00	8.75	0.751	7.88
64 I-T	45.19	153.5	1,146.4	2,688.5	4.49	17.5	2.3	13.29	17.86	8.71	0.686	7.20

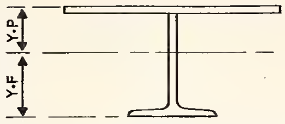


PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

30t

81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 7 1/2 x 60 I-T	43.76	144.8	1,132.4	2,599.0	4.42	17.9	2.3	12.87	18.24	7.56	0.695	7.59
55 I-T	40.26	132.4	1,082.8	2,373.5	4.24	17.9	2.2	11.84	18.12	7.53	0.630	7.06



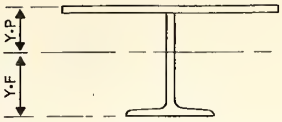
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

91.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,355.6	4,586.8	40,776.2	13.78	30.1	8.9	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,265.2	4,513.5	38,293.5	13.48	30.3	8.5	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,171.2	4,421.9	35,639.9	13.13	30.4	8.1	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,100.4	4,356.0	33,654.3	12.86	30.6	7.7	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,032.2	4,286.8	31,720.5	12.58	30.7	7.4	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	859.1	4,133.5	27,548.2	11.88	32.1	6.7	43.43	36.48	12.12	1.260	28.08
182 1-T	138.34	805.0	4,067.1	25,917.4	11.60	32.2	6.4	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	751.0	3,997.0	24,282.7	11.31	32.3	6.1	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	704.7	3,923.7	22,851.1	11.03	32.4	5.8	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	658.1	3,846.0	21,405.8	10.74	32.5	5.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	1,004.7	3,999.4	28,707.5	11.92	28.6	7.2	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	919.3	3,907.8	26,413.6	11.55	28.7	6.8	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	832.7	3,812.9	24,091.9	11.14	28.9	6.3	42.21	33.00	15.77	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	630.6	3,595.4	19,179.8	10.17	30.4	5.3	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	586.6	3,513.7	17,869.1	9.88	30.5	5.1	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	532.3	3,402.4	16,272.1	9.48	30.6	4.8	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	809.2	3,508.7	21,455.2	10.48	26.5	6.1	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	730.2	3,412.3	19,469.6	10.09	26.7	5.7	39.48	30.12	15.04	1.185	21.38
172 1-T	121.81	659.3	3,315.6	17,669.2	9.70	26.8	5.3	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	498.9	3,087.5	13,979.7	8.78	28.0	4.5	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	466.9	3,021.4	13,108.0	8.55	28.1	4.3	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	434.6	2,943.6	12,212.1	8.29	28.1	4.1	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	400.8	2,851.1	11,268.2	8.00	28.1	4.0	24.38	29.82	10.48	0.760	16.34
27 x 14 x 145 I-T	102.05	506.6	2,824.2	12,512.3	8.29	24.7	4.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	394.1	2,631.0	10,121.9	7.56	25.7	3.8	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	351.5	2,525.3	9,043.8	7.20	25.7	3.6	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	322.2	2,440.2	8,295.8	6.93	25.8	3.4	20.75	26.90	9.99	0.747	13.18
24 x 14 x 130 I-T	89.83	416.0	2,439.4	9,414.4	7.27	22.6	3.9	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	382.0	2,373.1	8,736.6	7.03	22.9	3.7	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	350.1	2,301.7	8,024.7	6.78	22.9	3.5	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	317.7	2,219.5	7,294.7	6.50	23.0	3.3	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	293.8	2,152.3	6,858.8	6.31	23.3	3.2	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	261.7	2,051.0	6,111.0	5.99	23.4	3.0	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	235.4	1,954.5	5,493.5	5.71	23.3	2.8	16.71	23.90	8.98	0.682	10.52
21 x 13 x 112 I-T	76.27	316.6	1,964.1	6,338.9	6.03	20.0	3.2	22.43	21.00	13.00	0.865	11.06
21 x 9 x 96 I-T	70.15	264.7	1,821.9	5,406.5	5.60	20.4	3.0	20.63	21.14	9.04	0.935	12.15
82 1-T	59.86	225.2	1,695.2	4,593.6	5.21	20.4	2.7	17.61	20.86	8.96	0.795	10.40
21 x 8 1/4 x 73 1-T	53.96	203.6	1,651.9	4,258.2	5.04	20.9	2.6	15.87	21.24	8.29	0.740	9.66
68 I-T	50.40	189.5	1,594.1	3,957.5	4.87	20.9	2.5	14.82	21.12	8.27	0.685	9.08
62 1-T	46.04	171.9	1,516.8	3,586.5	4.66	20.9	2.4	13.54	20.98	8.24	0.615	8.39

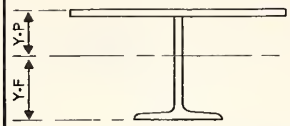


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

102.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,373.7	5,409.8	42,965.2	13.10	31.3	7.9	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,281.5	5,317.1	40,273.0	12.79	31.4	7.6	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,186.0	5,200.9	37,412.8	12.43	31.5	7.2	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,113.9	5,116.2	35,272.8	12.15	31.7	6.9	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,044.6	5,027.1	33,195.3	11.86	31.8	6.6	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	869.9	4,821.0	28,726.6	11.15	33.0	6.0	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	814.8	4,734.1	26,986.9	10.88	33.1	5.7	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	760.0	4,641.8	25,247.2	10.58	33.2	5.4	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	713.1	4,546.6	23,731.4	10.31	33.3	5.2	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	665.9	4,445.3	22,203.9	10.02	33.3	5.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,017.4	4,685.5	30,092.7	11.25	29.6	6.4	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	930.6	4,567.0	27,630.1	10.87	29.7	6.0	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	842.6	4,441.5	25,143.6	10.46	29.8	5.7	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	638.1	4,147.4	19,908.9	9.49	31.2	4.8	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	593.5	4,041.7	18,526.4	9.20	31.2	4.6	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	538.7	3,897.3	16,847.5	8.82	31.3	4.3	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	819.3	4,083.7	22,437.5	9.85	27.4	5.5	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	739.1	3,957.3	20,314.9	9.46	27.5	5.1	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	667.2	3,830.1	18,398.1	9.08	27.6	4.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	505.1	3,525.5	14,491.7	8.18	28.7	4.1	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	472.8	3,439.2	13,574.5	7.95	28.7	3.9	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	440.0	3,339.0	12,635.5	7.69	28.7	3.8	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	405.8	3,221.4	11,649.3	7.41	28.7	3.6	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	628.4	3,455.7	15,845.9	8.41	25.2	4.6	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	566.3	3,337.8	14,321.7	8.06	25.3	4.3	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	512.9	3,225.1	13,001.3	7.73	25.3	4.0	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	399.3	2,968.9	10,481.8	7.02	26.2	3.5	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	356.2	2,831.5	9,351.8	6.67	26.3	3.3	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	326.5	2,722.7	8,570.9	6.42	26.3	3.1	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	524.6	3,009.6	12,160.7	7.44	23.2	4.0	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	473.1	2,891.8	10,970.5	7.11	23.2	3.8	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	421.5	2,758.5	9,777.2	6.76	23.2	3.5	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	387.2	2,671.8	9,064.1	6.53	23.4	3.4	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	354.8	2,578.5	8,315.5	6.29	23.4	3.2	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	322.0	2,472.1	7,550.6	6.02	23.4	3.1	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	298.1	2,389.3	7,098.2	5.84	23.8	3.0	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	265.6	2,260.7	6,318.1	5.54	23.8	2.8	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	239.0	2,140.4	5,676.1	5.27	23.7	2.7	16.71	23.90	8.98	0.682	10.52



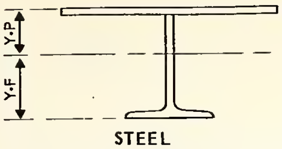
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
I-T AND T

30t

112.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
36 x 16 1/2 x 300 I-T	214.24	1,389.6	6,243.8	44,863.1	12.44	32.3	7.2	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,296.0	6,126.6	41,986.1	12.12	32.4	6.9	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,199.1	5,980.5	38,945.3	11.76	32.5	6.5	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,126.1	5,872.7	36,670.7	11.48	32.6	6.2	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,055.9	5,759.1	34,468.6	11.19	32.6	6.0	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	879.8	5,490.5	29,746.5	10.49	33.8	5.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	823.9	5,378.7	27,913.2	10.21	33.9	5.2	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	768.3	5,259.6	26,083.5	9.92	34.0	5.0	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	720.8	5,138.9	24,496.1	9.66	34.0	4.8	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	673.1	5,010.2	22,898.8	9.37	34.0	4.6	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,028.9	5,362.9	31,294.1	10.63	30.4	5.8	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	940.9	5,211.7	28,685.3	10.25	30.5	5.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	851.8	5,049.6	26,057.1	9.84	30.6	5.2	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	645.2	4,664.6	20,547.0	8.88	31.8	4.4	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	600.1	4,531.6	19,103.2	8.60	31.8	4.2	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	544.7	4,350.2	17,355.4	8.23	31.9	4.0	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	828.8	4,638.8	23,295.2	9.28	28.1	5.0	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	747.5	4,476.9	21,054.5	8.89	28.2	4.7	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	674.7	4,314.1	19,038.0	8.51	28.2	4.4	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	511.2	3,923.1	14,947.4	7.64	29.2	3.8	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	478.5	3,814.4	13,991.6	7.42	29.2	3.7	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	445.4	3,690.1	13,016.0	7.18	29.2	3.5	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	410.9	3,545.9	11,994.0	6.91	29.2	3.4	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	636.1	3,883.3	16,425.3	7.89	25.8	4.2	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	573.2	3,732.6	14,822.7	7.55	25.9	4.0	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	519.2	3,588.8	13,438.5	7.23	25.9	3.7	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	404.6	3,264.2	10,809.4	6.55	26.7	3.3	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	360.9	3,093.4	9,635.2	6.22	26.7	3.1	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	331.0	2,960.2	8,826.3	5.97	26.7	3.0	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	531.4	3,353.6	12,600.7	6.97	23.7	3.8	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	479.3	3,205.4	11,353.9	6.66	23.7	3.5	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	427.1	3,039.2	10,107.9	6.32	23.7	3.3	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	392.6	2,931.2	9,364.8	6.10	23.9	3.2	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	359.8	2,814.8	8,584.9	5.86	23.9	3.0	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	326.7	2,683.6	7,790.0	5.61	23.8	2.9	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	302.7	2,585.9	7,324.0	5.44	24.2	2.8	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	269.8	2,430.4	6,516.1	5.15	24.1	2.7	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	243.0	2,287.5	5,853.2	4.90	24.1	2.6	16.71	23.90	8.98	0.682	10.52

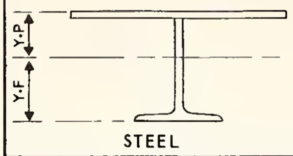


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

122.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,404.2	7,070.2	46,532.1	11.82	33.1	6.6	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,309.3	6,923.5	43,492.0	11.50	33.2	6.3	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,211.3	6,742.5	40,293.2	11.14	33.3	6.0	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,137.4	6,607.2	37,900.8	10.86	33.3	5.7	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,066.4	6,465.0	35,590.3	10.57	33.4	5.5	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	889.0	6,125.2	30,649.8	9.89	34.5	5.0	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	832.5	5,984.7	28,735.4	9.62	34.5	4.8	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	776.2	5,835.1	26,828.0	9.33	34.6	4.6	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	728.3	5,685.9	25,179.0	9.07	34.6	4.4	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	680.1	5,527.1	23,521.7	8.80	34.6	4.3	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,039.7	6,015.1	32,357.3	10.05	31.1	5.4	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	950.7	5,826.2	29,621.1	9.68	31.2	5.1	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	860.6	5,622.2	26,869.9	9.28	31.2	4.8	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	652.2	5,135.0	21,122.1	8.34	32.4	4.1	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	606.6	4,972.2	19,625.7	8.07	32.4	3.9	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	550.8	4,751.9	17,818.7	7.72	32.4	3.7	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	837.9	5,160.5	24,062.3	8.76	28.7	4.7	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	755.7	4,958.5	21,719.0	8.38	28.7	4.4	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	682.2	4,756.3	19,616.0	8.01	28.8	4.1	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	517.3	4,272.8	15,366.9	7.17	29.7	3.6	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	484.3	4,140.7	14,377.8	6.95	29.7	3.5	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	450.9	3,991.7	13,370.7	6.72	29.7	3.3	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	416.2	3,820.9	12,317.9	6.47	29.6	3.2	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	643.8	4,272.1	16,952.9	7.43	26.3	4.0	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	580.2	4,085.7	15,282.3	7.10	26.3	3.7	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	525.6	3,908.8	13,842.8	6.79	26.3	3.5	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	410.1	3,514.2	11,119.0	6.14	27.1	3.2	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	366.0	3,310.1	9,906.4	5.82	27.1	3.0	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	335.8	3,153.5	9,073.3	5.59	27.0	2.9	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	538.3	3,658.3	13,008.4	6.56	24.2	3.6	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	485.7	3,478.5	11,712.4	6.26	24.1	3.4	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	433.1	3,278.8	10,420.5	5.93	24.1	3.2	26.42	24.24	14.00	0.900	13.70
24 x 12x x 120 I-T	84.70	398.2	3,149.7	9,651.4	5.72	24.2	3.1	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	365.1	3,010.4	8,844.3	5.50	24.2	2.9	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	331.7	2,855.2	8,023.4	5.25	24.2	2.8	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	307.6	2,744.1	7,545.6	5.10	24.5	2.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	274.5	2,563.7	6,713.4	4.83	24.5	2.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	247.4	2,400.4	6,032.3	4.59	24.4	2.5	16.71	23.90	8.98	0.682	10.52

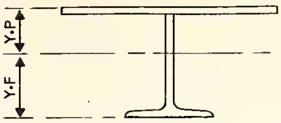


PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

132.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 1-T	214.24	1,417.9	7,872.4	48,023.3	11.24	33.9	6.1	63.01	36.72	16.65	1.680	34.70
280 1-T	199.68	1,321.9	7,691.6	44,838.8	10.93	33.9	5.8	58.73	36.50	16.59	1.570	32.30
260 1-T	186.30	1,222.9	7,471.0	41,500.9	10.57	33.9	5.6	54.79	36.24	16.55	1.440	30.62
245 1-T	175.31	1,148.2	7,304.6	39,005.0	10.29	34.0	5.3	51.56	36.06	16.51	1.350	28.92
230 1-T	165.10	1,076.5	7,130.3	36.599.3	10.01	34.0	5.1	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 1-T	147.66	898.0	6,712.5	31,468.9	9.35	35.0	4.7	43.43	36.48	12.12	1.260	28.08
182 1-T	138.34	840.9	6,540.4	29,483.6	9.08	35.1	4.5	40.69	36.32	12.07	1.180	26.33
170 1-T	129.07	784.1	6,357.6	27,508.3	8.80	35.1	4.3	37.96	36.16	12.03	1.100	24.58
160 1-T	122.03	735.8	6,178.1	25,805.6	8.55	35.1	4.2	35.89	36.00	12.00	1.020	23.50
150 1-T	114.89	687.2	5,987.5	24,096.1	8.29	35.1	4.0	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 1-T	170.91	1,050.2	6,628.9	33,317.8	9.53	31.7	5.0	50.27	33.50	15.86	1.400	27.80
220 1-T	157.07	960.4	6,398.1	30.469.9	9.16	31.7	4.8	46.20	33.24	15.81	1.275	25.76
200 1-T	143.50	869.4	6,148.2	27,611.0	8.77	31.8	4.5	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 1-T	114.31	659.2	5,551.5	21,655.7	7.86	32.8	3.9	33.62	33.50	11.56	1.055	21.27
141 1-T	106.62	613.3	5,357.9	20,113.2	7.60	32.8	3.8	31.36	33.30	11.53	0.960	24.15
130 1-T	99.11	557.1	5,098.3	18,254.7	7.26	32.8	3.6	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 1-T	148.40	847.0	5,639.1	24,765.2	8.29	29.2	4.4	43.65	30.38	15.10	1.315	23.54
190 1-T	134.24	764.0	5,394.0	22,331.8	7.92	29.2	4.1	39.48	30.12	15.04	1.185	21.38
172 1-T	121.81	689.8	5,150.1	20,153.1	7.56	29.2	3.9	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 1-T	99.55	523.7	4,572.2	15,765.4	6.75	30.1	3.4	29.28	30.30	10.55	1.000	18.63
124 1-T	93.60	490.4	4,416.8	14,747.1	6.54	30.1	3.3	27.53	30.16	10.52	0.930	17.64
116 1-T	88.15	456.8	4,243.8	13,712.4	6.32	30.0	3.2	25.93	30.00	10.50	0.850	16.92
108 1-T	82.89	421.8	4,047.7	12,632.6	6.08	29.9	3.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 1-T	124.95	651.7	4,616.7	17,447.2	7.02	26.8	3.8	36.75	27.30	14.09	1.190	19.79
160 1-T	112.61	587.5	4,393.6	15,716.7	6.70	26.8	3.6	33.12	27.08	14.02	1.075	17.81
145 1-T	102.05	532.3	4,183.1	14,228.4	6.40	26.7	3.4	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	415.9	3,720.4	11,421.5	5.78	27.5	3.1	25.01	27.28	10.07	0.932	15.54
102 1-T	76.19	371.5	3,484.9	10,175.1	5.48	27.4	2.9	22.41	27.06	10.02	0.827	14.02
94 1-T	70.53	341.0	3,306.7	9,320.6	5.25	27.3	2.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 1-T	109.94	545.7	3,921.5	13,397.8	6.19	24.6	3.4	32.33	24.72	14.09	1.135	16.21
145 1-T	99.74	492.6	3,710.4	12,058.4	5.90	24.5	3.2	29.34	24.48	14.04	1.020	14.88
130 1-T	89.83	439.5	3,478.4	10,726.1	5.59	24.4	3.1	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 1-T	84.70	404.4	3,329.3	9,934.1	5.39	24.6	3.0	24.91	24.30	12.09	0.930	13.51
110 1-T	77.50	371.0	3,168.5	9,102.8	5.18	24.5	2.9	22.80	24.16	12.04	0.855	12.32
100 1-T	70.48	337.2	2,991.4	8,258.8	4.95	24.5	2.8	20.73	24.00	12.00	0.775	11.23
24 x 9 94 1-T	69.66	313.1	2,868.7	7,770.6	4.80	24.8	2.7	20.49	24.28	9.06	0.872	12.53
84 1-T	62.38	279.6	2,666.4	6,916.8	4.54	24.7	2.6	18.35	24.08	9.01	0.772	11.32
76 1-T	56.81	252.3	2,485.7	6,219.2	4.32	24.6	2.5	16.71	23.90	8.98	0.682	10.52



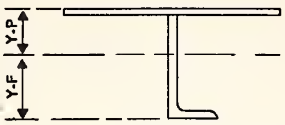
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE I-T AND T

30t

142.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
36 x 16 1/2 x 300 I-T	214.24	1,431.1	8,636.7	49,377.8	10.71	34.5	5.7	63.01	36.72	16.65	1.680	34.70
280 I-T	199.68	1,334.1	8,417.7	46,064.9	10.40	34.5	5.5	58.73	36.50	16.59	1.570	32.30
260 I-T	186.30	1,234.4	8,153.8	42,603.8	10.04	34.5	5.2	54.79	36.24	16.55	1.440	30.62
245 I-T	175.31	1,158.9	7,953.3	40,016.3	9.77	34.5	5.0	51.56	36.06	16.51	1.350	28.92
230 I-T	165.10	1,086.6	7,744.4	37,526.5	9.50	34.5	4.8	48.56	35.88	16.47	1.260	27.44
36 x 12 x 194 I-T	147.66	907.1	7,244.2	32,228.9	8.86	35.5	4.4	43.43	36.48	12.12	1.260	28.08
182 I-T	138.34	849.4	7,038.8	30,181.0	8.60	35.5	4.3	40.69	36.32	12.07	1.180	26.33
170 I-T	129.07	792.1	6,821.2	28,145.8	8.33	35.5	4.1	37.96	36.16	12.03	1.100	24.58
160 I-T	122.03	743.4	6,610.9	26,395.7	8.09	35.5	4.0	35.89	36.00	12.00	1.020	23.50
150 I-T	114.89	694.4	6,388.1	24,640.2	7.84	35.5	3.9	33.79	35.84	11.97	0.940	22.40
33 x 15 3/4 x 240 I-T	170.91	1,060.7	7,194.7	34,204.1	9.05	32.2	4.8	50.27	33.50	15.86	1.400	27.80
220 I-T	157.07	970.0	6,919.3	31,257.0	8.69	32.2	4.5	46.20	33.24	15.81	1.275	25.76
200 I-T	143.50	878.3	6,621.2	28,303.1	8.31	32.2	4.3	42.21	33.00	15.57	1.150	23.59
33 x 11 1/2 x 152 I-T	114.31	666.6	5,911.9	22,164.2	7.43	33.3	3.7	33.62	33.50	11.56	1.055	21.27
141 I-T	106.62	620.3	5,687.6	20,581.0	7.18	33.2	3.6	31.36	33.30	11.53	0.960	24.15
130 I-T	99.11	563.7	5,389.9	18,677.0	6.86	33.1	3.5	29.15	33.10	11.51	0.855	19.19
30 x 15 x 210 I-T	148.40	856.3	6,069.0	25,424.7	7.86	29.7	4.2	43.65	30.38	15.10	1.315	23.54
190 I-T	134.24	772.6	5,779.3	22,911.3	7.50	29.7	4.0	39.48	30.12	15.04	1.185	21.38
172 I-T	121.81	697.7	5,493.1	20,665.5	7.16	29.6	3.8	35.83	29.88	14.98	1.065	19.57
30 x 10 1/2 x 132 I-T	99.55	530.5	4,822.8	16,155.0	6.38	30.5	3.3	29.28	30.30	10.55	1.000	18.63
124 I-T	93.60	496.9	4,645.3	15,110.6	6.18	30.4	3.3	27.53	30.16	10.52	0.930	17.64
116 I-T	88.15	463.1	4,449.9	14,051.4	5.98	30.3	3.2	25.93	30.00	10.50	0.850	16.92
108 I-T	82.89	427.9	4,230.6	12,947.6	5.75	30.3	3.1	24.38	29.82	10.48	0.760	16.34
27 x 14 x 177 I-T	124.95	660.0	4,916.1	17,922.6	6.66	27.2	3.6	36.75	27.30	14.09	1.190	19.79
160 I-T	112.61	595.2	4,656.5	16,138.7	6.35	27.1	3.5	33.12	27.08	14.02	1.075	17.81
145 I-T	102.05	539.6	4,413.5	14,606.9	6.06	27.1	3.3	30.01	26.88	13.96	0.975	16.12
27 x 10 x 114 I-T	85.05	422.3	3,887.1	11,725.8	5.47	27.8	3.0	25.01	27.28	10.07	0.932	15.54
102 I-T	76.19	377.5	3,623.3	10,449.1	5.18	27.7	2.9	22.41	27.06	10.02	0.827	14.02
94 I-T	70.53	346.9	3,426.1	9,575.2	4.97	27.6	2.8	20.75	26.90	9.99	0.747	13.18
24 x 14 x 160 I-T	109.94	553.5	4,144.7	13,780.2	5.87	24.9	3.3	32.33	24.72	14.09	1.135	16.21
145 I-T	99.74	500.0	3,903.8	12,402.0	5.59	24.8	3.2	29.34	24.48	14.04	1.020	14.88
130 I-T	89.83	446.5	3,641.9	11,033.4	5.29	24.7	3.0	26.42	24.24	14.00	0.900	13.70
24 x 12 x 120 I-T	84.70	411.2	3,474.8	10,220.9	5.10	24.9	2.9	24.91	24.30	12.09	0.930	13.51
110 I-T	77.50	377.5	3,294.7	9,367.7	4.90	24.8	2.8	22.80	24.16	12.04	0.855	12.32
100 I-T	70.48	343.5	3,098.2	8,502.9	4.68	24.8	2.7	20.73	24.00	12.00	0.775	11.23
24 x 9 x 94 I-T	69.66	319.2	2,966.1	8,005.4	4.54	25.1	2.7	20.49	24.28	9.06	0.872	12.53
84 I-T	62.38	285.5	2,745.3	7,132.0	4.30	25.0	2.6	18.35	24.08	9.01	0.772	11.32
76 I-T	56.81	258.0	2,550.6	6,419.5	4.09	24.9	2.5	16.71	23.90	8.98	0.682	10.52



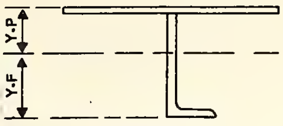
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

7.65# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.		LBS.	IN.^3	IN.^3	IN.^4	IN.	IN.	IN.	IN.^2	IN.	IN.	IN.	IN.^2
9 x 4 x 1 x 40.8	L	40.80	31.6	35.3	153.4	3.30	4.3	4.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1	L	36.07	29.8	32.6	143.1	3.35	4.4	4.8	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3	L	31.25	28.0	29.4	131.8	3.41	4.5	4.7	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3	L	26.28	26.0	26.0	119.6	3.48	4.6	4.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8	L	23.80	24.2	25.1	113.2	3.52	4.7	4.5	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3	L	21.25	22.2	24.1	106.2	3.56	4.8	4.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2	L	44.20	28.2	39.5	134.8	2.99	3.4	4.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1	L	39.03	26.7	36.4	126.1	3.05	3.5	4.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4	L	37.40	26.6	29.7	114.8	2.96	3.9	4.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8	L	33.80	25.1	33.1	116.9	3.11	3.5	4.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1	L	33.08	25.2	27.5	107.7	3.01	3.9	4.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7	L	28.70	23.7	25.0	99.8	3.07	4.0	4.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5	L	28.42	23.5	29.2	106.7	3.19	3.6	4.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7	L	25.70	22.7	27.1	101.1	3.23	3.7	4.5	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2	L	24.17	22.1	22.2	90.8	3.14	4.1	4.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0	L	22.95	21.8	25.0	95.4	3.28	3.8	4.4	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9	L	21.86	20.6	21.5	86.2	3.17	4.2	4.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2	L	20.16	20.9	22.6	89.0	3.32	3.9	4.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6	L	19.55	19.0	20.7	81.0	3.21	4.3	3.9	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2	L	17.20	17.2	19.9	75.5	3.24	4.4	3.8	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2	L	30.12	20.8	22.8	78.2	2.67	3.4	3.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2	L	26.15	19.7	20.8	72.7	2.72	3.5	3.7	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1	L	22.03	18.5	18.6	66.7	2.79	3.6	3.6	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0	L	19.96	17.2	18.0	63.4	2.82	3.7	3.5	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9	L	17.85	15.9	17.4	59.7	2.85	3.8	3.4	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8	L	15.71	14.4	16.8	55.9	2.88	3.9	3.3	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6	L	13.53	12.8	16.2	51.5	2.90	4.0	3.2	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2	L	27.13	16.8	18.3	54.2	2.32	3.0	3.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6	L	23.60	16.0	16.8	50.7	2.37	3.0	3.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0	L	19.92	15.1	15.2	46.8	2.42	3.1	3.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1	L	18.05	14.0	14.8	44.6	2.45	3.2	3.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2	L	16.15	12.9	14.4	42.1	2.48	3.3	2.9	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3	L	15.30	11.8	14.1	39.8	2.45	3.4	2.8	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3	L	14.21	11.8	13.9	39.6	2.51	3.4	2.8	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3	L	12.27	10.5	13.5	36.6	2.53	3.5	2.7	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7	L	11.63	9.6	13.3	34.4	2.49	3.6	2.6	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3	L	10.30	9.1	13.0	33.1	2.54	3.6	2.5	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8	L	9.76	8.3	12.8	31.2	2.50	3.7	2.4	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9	L	7.85	7.0	12.3	27.5	2.49	4.0	2.2	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8	L	19.75	11.8	12.3	31.3	1.99	2.6	2.5	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8	L	16.73	10.7	11.8	29.1	2.03	2.7	2.5	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6	L	13.60	9.2	11.3	26.4	2.07	2.8	2.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8	L	12.75	8.3	11.1	24.7	2.05	3.0	2.2	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3	L	12.27	9.8	11.1	27.0	2.17	2.8	2.4	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0	L	12.00	8.5	11.0	24.8	2.10	2.9	2.3	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3	L	11.25	7.6	10.7	23.0	2.06	3.0	2.1	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4	L	10.37	7.6	10.7	23.0	2.11	3.0	2.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8	L	9.72	6.8	10.5	21.4	2.07	3.1	2.0	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7	L	8.70	6.6	10.4	20.8	2.11	3.2	2.0	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2	L	8.16	5.9	10.2	19.4	2.07	3.3	1.9	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0	L	7.00	5.5	10.1	18.5	2.10	3.4	1.8	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6	L	6.60	4.9	9.8	17.1	2.05	3.5	1.7	1.94	5.00	3.00	0.250	1.25



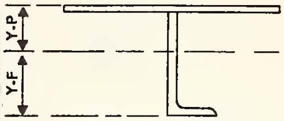
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7 L	14.62	7.9	8.9	17.6	1.65	2.2	2.0	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.0	8.7	16.3	1.63	2.3	1.9	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	6.9	8.6	16.0	1.69	2.3	1.9	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.2	8.4	14.9	1.67	2.4	1.8	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.3	8.4	15.1	1.70	2.4	1.8	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.6	8.2	14.0	1.68	2.5	1.7	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.6	8.3	14.0	1.71	2.5	1.7	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.1	8.1	13.1	1.68	2.6	1.6	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.4	8.2	13.7	1.74	2.5	1.7	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.0	8.1	12.9	1.72	2.6	1.6	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.4	7.9	11.9	1.68	2.7	1.5	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.1	7.8	11.3	1.70	2.7	1.4	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.7	7.7	10.5	1.66	2.8	1.4	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.1	7.2	11.1	1.47	2.2	1.5	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.5	7.0	10.1	1.44	2.2	1.4	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.7	7.1	10.4	1.48	2.2	1.5	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.1	6.9	9.5	1.45	2.3	1.4	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.2	6.9	9.7	1.48	2.3	1.4	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.7	6.8	8.9	1.45	2.4	1.3	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.7	6.8	8.8	1.47	2.4	1.3	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.2	6.6	8.0	1.44	2.5	1.2	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.1	6.6	7.8	1.45	2.5	1.2	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.7	6.5	7.1	1.41	2.6	1.1	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.2	5.9	7.8	1.27	1.9	1.3	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.6	5.8	7.1	1.24	2.0	1.2	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.8	5.9	7.4	1.28	1.9	1.3	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.1	5.6	6.3	1.20	2.1	1.1	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.3	5.7	6.7	1.25	2.0	1.2	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.5	5.8	6.9	1.28	2.0	1.2	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.0	5.7	6.3	1.25	2.1	1.1	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.0	5.7	6.3	1.27	2.1	1.1	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.6	5.5	5.7	1.24	2.2	1.0	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.2	5.3	5.0	1.18	2.2	0.9	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.5	5.5	5.6	1.25	2.2	1.0	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.2	5.5	5.1	1.22	2.3	0.9	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	5.3	4.5	1.16	2.3	0.9	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	5.4	4.7	1.21	2.3	0.9	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	5.1	3.7	1.11	2.5	0.7	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.0	4.4	3.7	1.00	1.8	0.8	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	4.4	3.4	0.99	1.9	0.8	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	4.3	3.0	0.96	2.0	0.7	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	4.1	2.5	0.92	2.1	0.6	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	3.4	2.2	0.80	1.5	0.7	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	3.4	2.1	0.80	1.6	0.6	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	3.3	1.8	0.77	1.6	0.6	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	3.1	1.5	0.72	1.7	0.5	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	3.2	1.5	0.73	1.7	0.5	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	3.0	1.3	0.68	1.8	0.4	0.62	2.00	1.50	0.187	0.37



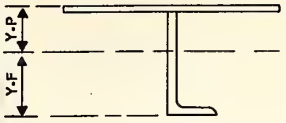
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
E-L AND L

60t

8.92# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.		LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 4 x 1 x 40.8	L	40.80	36.7	37.1	170.1	3.38	4.6	4.6	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1	L	36.07	34.2	34.9	159.3	3.44	4.7	4.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3	L	31.25	30.9	33.1	147.3	3.49	4.8	4.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3	L	26.28	27.3	31.2	134.2	3.56	4.9	4.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8	L	23.80	25.4	30.3	127.2	3.59	5.0	4.2	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3	L	21.25	23.3	29.3	119.5	3.62	5.1	4.1	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2	L	44.20	33.0	41.5	151.0	3.08	3.6	4.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1	L	39.03	31.5	38.2	141.9	3.14	3.7	4.5	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4	L	37.40	31.1	31.2	128.0	3.04	4.1	4.1	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8	L	33.80	29.9	34.7	132.1	3.21	3.8	4.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1	L	33.08	28.9	29.7	120.5	3.09	4.2	4.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7	L	28.70	26.3	28.3	112.0	3.15	4.3	4.0	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5	L	28.42	28.4	30.6	121.0	3.28	4.0	4.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7	L	25.70	27.5	28.4	114.9	3.32	4.0	4.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2	L	24.17	23.2	26.8	102.3	3.20	4.4	3.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0	L	22.95	26.1	26.7	108.5	3.36	4.2	4.1	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9	L	21.86	21.6	26.1	97.2	3.23	4.5	3.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2	L	20.16	23.6	25.8	101.3	3.39	4.3	3.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6	L	19.55	19.8	25.3	91.4	3.25	4.6	3.6	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2	L	17.20	18.0	24.5	85.2	3.28	4.7	3.5	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2	L	30.12	24.0	24.8	88.1	2.74	3.7	3.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2	L	26.15	21.8	23.8	82.1	2.79	3.8	3.5	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1	L	22.03	19.4	22.7	75.5	2.84	3.9	3.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0	L	19.96	18.0	22.1	71.7	2.86	4.0	3.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9	L	17.85	16.6	21.5	67.6	2.88	4.1	3.1	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8	L	15.71	15.0	20.9	63.2	2.90	4.2	3.0	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6	L	13.53	13.3	20.3	58.1	2.91	4.4	2.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2	L	27.13	19.3	20.2	61.4	2.38	3.2	3.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6	L	23.60	17.6	19.5	57.5	2.42	3.3	3.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0	L	19.92	15.8	18.7	53.2	2.47	3.4	2.8	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1	L	18.05	14.7	18.3	50.7	2.49	3.5	2.8	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2	L	16.15	13.5	17.9	47.8	2.50	3.5	2.7	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3	L	15.30	12.4	17.6	45.1	2.47	3.7	2.6	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3	L	14.21	12.3	17.5	44.9	2.52	3.7	2.6	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3	L	12.27	10.9	17.0	41.4	2.52	3.8	2.4	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7	L	11.63	9.9	16.7	38.8	2.48	3.9	2.3	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3	L	10.30	9.4	16.5	37.3	2.51	4.0	2.3	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8	L	9.76	8.6	16.3	35.1	2.47	4.1	2.2	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9	L	7.85	7.2	15.8	30.7	2.43	4.3	1.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8	L	19.75	12.4	15.1	35.6	2.03	2.9	2.4	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8	L	16.73	11.2	14.7	33.1	2.06	3.0	2.3	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6	L	13.60	9.6	14.1	29.9	2.09	3.1	2.1	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8	L	12.75	8.7	13.9	27.9	2.05	3.2	2.0	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3	L	12.27	10.2	14.2	30.9	2.18	3.0	2.2	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0	L	12.00	8.8	13.9	28.1	2.09	3.2	2.0	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3	L	11.25	7.9	13.6	26.0	2.05	3.3	1.9	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4	L	10.37	7.8	13.6	25.9	2.09	3.3	1.9	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8	L	9.72	7.1	13.3	24.1	2.05	3.4	1.8	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7	L	8.70	6.8	13.2	23.4	2.07	3.5	1.8	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2	L	8.16	6.1	13.0	21.7	2.03	3.6	1.7	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0	L	7.00	5.7	12.9	20.5	2.04	3.6	1.6	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6	L	6.60	5.1	12.6	18.9	1.98	3.7	1.5	1.94	5.00	3.00	0.250	1.25



PROPERTIES OF
COMBINED BEAM AND PLATE
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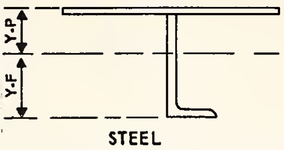
8.92# PLATE WEIGHT

NOMINAL SIZE		WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
			LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
											WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.		LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7	L	14.62	8.3	11.2	20.1	1.67	2.4	1.8	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6	L	13.53	7.4	10.9	18.5	1.64	2.5	1.7	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9	L	11.90	7.2	10.9	18.2	1.69	2.5	1.7	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1	L	11.05	6.4	10.7	16.9	1.66	2.6	1.6	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6	L	10.51	6.6	10.7	17.2	1.70	2.6	1.6	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8	L	9.76	5.9	10.5	15.9	1.66	2.7	1.5	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1	L	9.08	5.8	10.5	15.9	1.69	2.7	1.5	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5	L	8.43	5.2	10.3	14.7	1.66	2.8	1.4	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2	L	8.16	5.6	10.5	15.4	1.71	2.8	1.5	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7	L	7.65	5.1	10.4	14.4	1.68	2.8	1.4	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2	L	7.11	4.5	10.1	13.2	1.63	2.9	1.3	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2	L	6.15	4.2	10.1	12.6	1.64	3.0	1.2	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8	L	5.75	3.8	9.9	11.6	1.59	3.0	1.2	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2	L	10.20	5.4	9.1	12.5	1.46	2.3	1.4	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4	L	9.35	4.7	8.8	11.4	1.42	2.4	1.3	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1	L	9.01	4.9	9.0	11.8	1.46	2.4	1.3	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3	L	8.26	4.3	8.7	10.7	1.42	2.5	1.2	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9	L	7.82	4.4	8.8	10.9	1.45	2.5	1.2	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2	L	7.17	3.9	8.7	9.9	1.41	2.6	1.1	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6	L	6.56	3.8	8.7	9.8	1.43	2.6	1.1	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1	L	6.05	3.3	8.5	8.9	1.38	2.7	1.1	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4	L	5.30	3.2	8.5	8.6	1.39	2.7	1.0	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9	L	4.90	2.8	8.3	7.8	1.34	2.8	0.9	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4	L	9.35	4.3	7.6	8.9	1.26	2.0	1.2	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5	L	8.50	3.8	7.4	8.1	1.22	2.1	1.1	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3	L	8.26	4.0	7.5	8.4	1.26	2.1	1.1	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7	L	7.65	3.2	7.1	7.1	1.18	2.2	1.0	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6	L	7.51	3.5	7.3	7.6	1.22	2.2	1.0	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2	L	7.17	3.6	7.4	7.8	1.25	2.2	1.0	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6	L	6.53	3.1	7.3	7.0	1.21	2.2	1.0	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1	L	6.05	3.1	7.3	7.0	1.23	2.3	1.0	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6	L	5.51	2.7	7.1	6.3	1.19	2.3	0.9	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0	L	5.00	2.3	6.8	5.6	1.13	2.4	0.8	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9	L	4.90	2.6	7.1	6.2	1.19	2.4	0.9	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5	L	4.45	2.3	7.0	5.6	1.15	2.4	0.8	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1	L	4.05	2.0	6.7	4.9	1.10	2.5	0.7	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71	L	3.71	2.1	6.9	5.1	1.14	2.5	0.7	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07	L	3.06	1.5	6.4	4.0	1.03	2.6	0.6	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3	L	5.27	2.1	5.6	4.1	0.96	2.0	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5	L	4.45	1.8	5.5	3.7	0.94	2.0	0.7	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62	L	3.60	1.5	5.4	3.2	0.91	2.1	0.6	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75	L	2.75	1.2	5.2	2.7	0.85	2.2	0.5	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7	L	4.62	1.5	4.3	2.5	0.77	1.6	0.6	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92	L	3.91	1.4	4.2	2.3	0.75	1.7	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19	L	3.20	1.2	4.1	2.0	0.72	1.7	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77	L	2.75	0.9	3.9	1.7	0.67	1.8	0.4	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44	L	2.41	0.9	3.9	1.6	0.67	1.8	0.4	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12	L	2.11	0.7	3.7	1.4	0.62	1.8	0.4	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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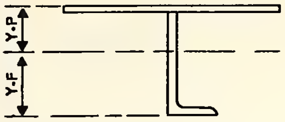
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	81.9	95.0	802.5	6.59	9.8	8.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	76.3	90.8	756.4	6.72	9.9	8.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	70.6	86.6	709.7	6.87	10.1	8.2	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	67.7	84.6	686.2	6.96	10.1	8.1	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	83.1	87.8	651.0	5.34	7.8	7.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	78.9	84.6	622.5	5.42	7.9	7.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	76.6	82.9	606.9	5.46	7.9	7.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	74.3	81.2	591.8	5.51	8.0	7.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	72.0	79.5	576.1	5.57	8.0	7.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	69.6	77.8	560.4	5.63	8.1	7.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	67.2	76.2	544.5	5.69	8.1	7.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	60.2	73.3	504.4	5.55	8.4	6.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	64.8	74.5	528.6	5.76	8.2	7.1	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	52.4	68.1	451.3	5.76	8.6	6.6	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	47.3	65.0	417.7	5.93	8.8	6.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	53.4	62.6	381.7	4.87	7.2	6.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	46.6	58.1	342.6	5.08	7.4	5.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	43.1	56.0	322.6	5.21	7.5	5.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	40.8	54.7	309.6	5.31	7.6	5.7	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	49.5	57.6	326.3	4.52	6.6	5.7	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	46.2	55.4	308.7	4.59	6.7	5.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	43.3	53.8	293.9	4.72	6.8	5.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	39.0	52.0	273.0	4.63	7.0	5.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	40.1	52.0	277.1	4.84	6.9	5.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	36.3	50.4	258.5	4.72	7.1	5.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	34.9	49.7	251.1	4.77	7.2	5.1	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	35.5	43.8	201.0	3.84	5.7	4.6	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	31.4	41.6	183.4	3.99	5.8	4.4	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	27.2	39.9	165.7	4.01	6.1	4.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	28.5	40.2	170.9	4.11	6.0	4.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	24.8	38.8	155.2	4.02	6.2	4.0	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.1	39.1	156.7	4.09	6.2	4.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.7	37.9	145.6	4.10	6.4	3.8	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	38.7	42.5	187.4	3.45	4.8	4.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	35.7	40.8	176.1	3.50	4.9	4.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	32.2	39.0	163.1	3.55	5.1	4.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	28.4	37.1	148.8	3.60	5.2	4.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	26.4	36.2	141.1	3.62	5.4	3.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	24.1	35.2	132.5	3.64	5.5	3.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	38.4	43.4	168.1	3.17	3.9	4.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	37.0	39.9	158.3	3.22	4.0	4.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	32.6	36.2	141.6	3.10	4.3	3.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	35.5	36.2	147.7	3.29	4.1	4.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	30.2	34.9	133.6	3.15	4.4	3.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	27.4	33.6	124.5	3.20	4.5	3.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	31.8	33.9	135.4	3.34	4.3	4.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	29.5	33.1	128.6	3.37	4.4	3.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	24.1	32.1	113.7	3.24	4.7	3.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	27.0	32.3	121.4	3.40	4.5	3.8	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	22.4	31.4	108.0	3.26	4.8	3.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	24.4	31.4	113.2	3.42	4.6	3.6	5.93	8.00	6.00	0.437	3.50



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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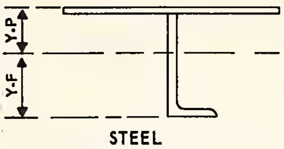
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 1/2 x 19.6 L	19.55	20.5	30.6	101.4	3.27	4.9	3.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.6	29.8	94.5	3.28	5.1	3.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	25.1	29.4	98.1	2.79	3.9	3.3	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	22.7	28.4	91.5	2.83	4.0	3.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.2	27.3	84.1	2.87	4.2	3.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.7	26.8	79.8	2.88	4.3	3.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.2	26.2	75.1	2.89	4.4	2.9	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.5	25.6	70.1	2.89	4.5	2.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.7	25.0	64.3	2.88	4.7	2.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	20.2	24.1	68.6	2.42	3.4	2.8	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	18.4	23.4	64.4	2.45	3.5	2.8	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.4	22.7	59.5	2.49	3.6	2.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.2	22.3	56.5	2.50	3.7	2.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.0	21.9	53.3	2.50	3.8	2.4	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.8	21.5	50.1	2.46	3.9	2.3	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.7	21.5	49.8	2.51	3.9	2.3	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	11.2	21.0	45.7	2.49	4.1	2.2	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.2	20.6	42.8	2.44	4.2	2.1	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.7	20.5	41.1	2.46	4.2	2.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.9	20.1	38.4	2.41	4.3	1.9	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.3	19.6	33.4	2.35	4.5	1.7	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.0	18.3	39.9	2.04	3.1	2.2	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.6	17.9	37.0	2.07	3.2	2.1	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.0	17.4	33.3	2.07	3.3	1.9	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.0	17.0	30.9	2.03	3.4	1.8	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.4	17.6	34.4	2.16	3.3	2.0	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.1	17.1	31.1	2.07	3.4	1.8	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.1	16.7	28.7	2.02	3.5	1.7	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.1	16.8	28.6	2.05	3.5	1.7	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.3	16.5	26.5	2.00	3.6	1.6	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.9	16.4	25.6	2.02	3.7	1.6	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.3	16.1	23.7	1.96	3.8	1.5	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.8	16.1	22.3	1.96	3.9	1.4	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.2	15.7	20.5	1.90	3.9	1.3	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.6	13.7	22.5	1.67	2.6	1.6	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.6	13.4	20.7	1.64	2.7	1.5	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.4	13.4	20.3	1.67	2.7	1.5	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.6	13.2	18.7	1.64	2.8	1.4	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.8	13.3	19.0	1.67	2.8	1.4	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.0	13.0	17.5	1.63	2.9	1.3	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.0	13.1	17.5	1.65	2.9	1.3	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.4	12.8	16.1	1.61	3.0	1.3	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.2	12.9	15.8	1.62	3.0	1.2	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.7	12.5	14.4	1.57	3.1	1.2	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.3	12.5	13.7	1.57	3.2	1.1	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	12.3	12.5	1.52	3.2	1.0	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.5	11.3	13.9	1.43	2.5	1.2	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.8	10.9	12.5	1.39	2.6	1.2	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.0	11.1	13.0	1.43	2.6	1.2	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.4	10.8	11.7	1.38	2.7	1.1	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.5	10.9	12.0	1.41	2.7	1.1	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.0	10.7	10.8	1.36	2.7	1.0	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.9	10.7	10.7	1.37	2.8	1.0	1.93	3.50	3.00	0.312	1.09



PROPERTIES OF COMBINED BEAM AND PLATE

[-L AND L

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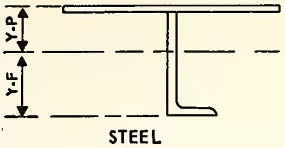
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.4	10.5	9.7	1.32	2.8	0.9	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.2	10.5	9.3	1.32	2.9	0.9	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	10.2	8.4	1.27	2.9	0.8	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.5	9.4	9.9	1.23	2.2	1.1	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.9	9.1	8.9	1.19	2.3	1.0	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.1	9.3	9.3	1.22	2.3	1.0	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.3	8.7	7.8	1.14	2.4	0.9	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.6	9.0	8.3	1.18	2.3	0.9	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.7	9.2	8.6	1.21	2.3	0.9	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.2	8.9	7.7	1.16	2.4	0.9	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.2	9.0	7.7	1.18	2.4	0.9	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.8	8.7	6.9	1.13	2.5	0.8	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.4	8.4	6.0	1.07	2.5	0.7	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.7	8.8	6.7	1.13	2.5	0.8	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	8.6	6.0	1.09	2.6	0.7	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	8.2	5.2	1.03	2.6	0.6	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	8.5	5.5	1.06	2.6	0.6	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.6	7.8	4.2	0.95	2.7	0.5	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.1	6.9	4.5	0.92	2.1	0.6	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	6.7	4.0	0.89	2.2	0.6	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	6.5	3.5	0.85	2.2	0.5	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	6.2	2.8	0.79	2.3	0.5	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.6	5.2	2.7	0.73	1.7	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	5.1	2.5	0.71	1.8	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	4.9	2.1	0.68	1.8	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	4.6	1.8	0.62	1.9	0.4	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	4.7	1.7	0.62	1.9	0.4	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.8	4.3	1.4	0.57	1.9	0.3	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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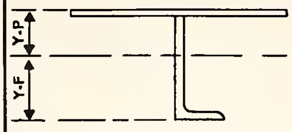
11.47# PLATE WEIGHT

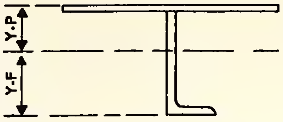
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	84.9	107.8	868.6	6.68	10.2	8.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	79.1	103.8	820.4	6.80	10.4	7.9	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	73.0	99.9	771.2	6.94	10.6	7.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	69.9	98.0	746.1	7.02	10.7	7.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	86.3	98.4	702.3	5.43	8.1	7.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	81.9	95.3	672.9	5.50	8.2	7.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	79.5	93.6	656.8	5.55	8.3	7.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	77.1	92.0	641.0	5.60	8.3	7.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	74.6	90.4	624.6	5.65	8.4	6.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	72.1	88.8	608.2	5.71	8.4	6.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	69.6	87.2	591.5	5.77	8.5	6.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	62.5	84.0	547.8	5.61	8.8	6.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	67.1	85.6	574.8	5.83	8.6	6.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	54.2	79.0	491.2	5.81	9.1	6.2	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	48.8	76.3	454.7	5.95	9.3	6.0	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	55.4	71.9	415.7	4.93	7.5	5.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	48.2	67.7	374.1	5.12	7.8	5.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	44.4	65.8	352.4	5.23	7.9	5.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	41.9	64.7	338.0	5.31	8.1	5.2	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	51.4	66.3	355.7	4.58	6.9	5.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	48.0	64.1	336.9	4.64	7.0	5.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	44.8	62.7	320.9	4.75	7.2	5.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	40.4	60.6	297.8	4.66	7.4	4.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	41.3	61.0	302.6	4.86	7.3	5.0	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	37.5	59.2	282.0	4.73	7.5	4.8	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	36.0	58.6	273.8	4.77	7.6	4.7	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	36.8	51.0	219.9	3.88	6.0	4.3	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	32.5	49.0	200.7	4.01	6.2	4.1	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.0	47.3	180.9	4.00	6.5	3.8	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	29.3	47.8	186.8	4.10	6.4	3.9	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	25.6	46.2	169.2	4.00	6.6	3.7	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.8	46.6	170.8	4.06	6.6	3.7	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.3	45.5	158.3	4.05	6.8	3.5	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	40.2	49.0	205.1	3.50	5.1	4.2	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	37.0	47.3	192.9	3.55	5.2	4.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	33.4	45.6	178.8	3.58	5.4	3.9	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	29.3	43.8	163.1	3.62	5.6	3.7	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	27.2	42.9	154.5	3.63	5.7	3.6	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	24.9	41.9	144.8	3.63	5.8	3.5	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	44.5	45.1	185.5	3.23	4.1	4.2	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	41.4	43.1	174.9	3.28	4.2	4.1	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	33.9	42.0	155.4	3.14	4.6	3.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	37.5	41.7	163.4	3.34	4.4	3.9	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	31.3	40.8	146.7	3.18	4.7	3.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	28.4	39.4	136.7	3.22	4.8	3.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	32.9	40.1	149.7	3.38	4.6	3.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	30.4	39.4	142.0	3.40	4.7	3.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	24.9	38.0	124.7	3.24	5.0	3.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	27.8	38.5	133.8	3.41	4.8	3.5	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	23.1	37.3	118.3	3.25	5.1	3.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.0	37.7	124.5	3.42	5.0	3.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.2	36.6	111.0	3.25	5.2	3.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.1	35.8	103.1	3.24	5.4	2.9	5.06	8.00	4.00	0.437	3.50



PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	26.0	34.5	108.0	2.82	4.1	3.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	23.6	33.5	100.7	2.85	4.3	3.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.8	32.5	92.4	2.87	4.4	2.8	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.3	31.9	87.6	2.87	4.5	2.7	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.6	31.4	82.2	2.87	4.7	2.6	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.0	30.8	76.5	2.86	4.8	2.5	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.1	30.1	69.9	2.83	5.0	2.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	20.9	28.5	75.8	2.44	3.6	2.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.0	27.8	71.0	2.46	3.7	2.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.9	27.1	65.4	2.48	3.9	2.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.7	26.7	62.0	2.49	4.0	2.3	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.3	26.3	58.3	2.48	4.1	2.2	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.1	25.8	54.7	2.43	4.2	2.1	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.0	25.9	54.3	2.47	4.2	2.1	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	11.5	25.4	49.7	2.44	4.3	2.0	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.5	24.9	46.3	2.38	4.4	1.9	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.9	24.8	44.4	2.39	4.5	1.8	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.0	24.4	41.4	2.33	4.6	1.7	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.5	23.8	35.7	2.25	4.8	1.5	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.4	21.9	43.9	2.04	3.3	2.0	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.0	21.4	40.6	2.05	3.4	1.9	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.2	20.9	36.3	2.04	3.5	1.7	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.2	20.5	33.6	1.99	3.6	1.6	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.7	21.3	37.6	2.12	3.5	1.8	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.3	20.7	33.9	2.02	3.6	1.6	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.3	20.2	31.1	1.97	3.7	1.5	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.2	20.3	31.0	1.99	3.8	1.5	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.4	19.9	28.5	1.94	3.8	1.4	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.1	19.9	27.6	1.94	3.9	1.4	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.4	19.5	25.4	1.89	4.0	1.3	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.9	19.5	23.8	1.87	4.1	1.2	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.3	18.9	21.8	1.81	4.1	1.2	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.9	16.5	24.7	1.65	2.8	1.5	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.9	16.1	22.6	1.61	2.9	1.4	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.6	16.2	22.1	1.64	2.9	1.4	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.8	15.9	20.4	1.60	3.0	1.3	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.9	16.0	20.7	1.63	3.0	1.3	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.2	15.6	19.0	1.58	3.1	1.2	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.1	15.8	18.9	1.60	3.1	1.2	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.5	15.4	17.4	1.55	3.2	1.1	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.3	15.5	17.0	1.56	3.2	1.1	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.7	15.1	15.5	1.50	3.3	1.0	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	15.1	14.6	1.49	3.3	1.0	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	14.7	13.3	1.44	3.4	0.9	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.7	13.6	15.1	1.40	2.7	1.1	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.0	13.1	13.6	1.35	2.7	1.0	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.2	13.4	14.1	1.38	2.7	1.1	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.5	13.0	12.7	1.33	2.8	1.0	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x3 x 7.9 L	7.82	4.6	13.2	12.9	1.35	2.8	1.0	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.0	12.8	11.6	1.30	2.9	0.9	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.0	12.9	11.5	1.31	2.9	0.9	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	12.5	10.3	1.26	3.0	0.8	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	12.6	9.9	1.25	3.0	0.8	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	12.2	8.9	1.20	3.1	0.7	1.44	3.50	2.50	0.250	0.87



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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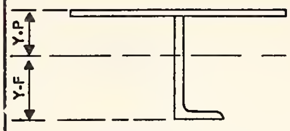
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
3 x 3 x 1/2 x 9.4 L	9.35	4.6	11.3	10.7	1.20	2.3	1.0	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.0	10.9	9.6	1.15	2.4	0.9	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.2	11.2	10.0	1.18	2.4	0.9	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.4	10.5	8.4	1.10	2.5	0.8	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.7	10.8	9.0	1.14	2.5	0.8	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.8	11.1	9.2	1.16	2.4	0.8	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.3	10.7	8.2	1.11	2.5	0.8	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.3	10.8	8.2	1.12	2.5	0.8	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.8	10.4	7.3	1.07	2.6	0.7	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.4	9.9	6.4	1.01	2.6	0.6	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.7	10.5	7.1	1.07	2.6	0.7	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.4	10.2	6.3	1.02	2.7	0.6	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	9.7	5.5	0.97	2.7	0.6	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	10.0	5.8	0.99	2.7	0.6	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.6	9.1	4.4	0.89	2.8	0.5	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	8.1	4.8	0.87	2.2	0.6	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	7.9	4.3	0.84	2.2	0.5	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	7.6	3.6	0.79	2.3	0.5	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.3	7.2	3.0	0.73	2.4	0.4	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.6	6.1	2.9	0.69	1.8	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	6.0	2.6	0.67	1.8	0.4	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	5.7	2.3	0.63	1.9	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	5.2	1.9	0.58	1.9	0.4	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	5.3	1.8	0.58	1.9	0.3	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.8	4.8	1.5	0.53	2.0	0.3	0.62	2.00	1.50	0.187	0.37



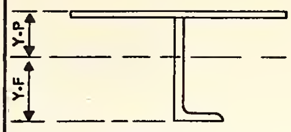
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
E-L AND L

60t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	87.9	122.6	937.5	6.74	10.7	7.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	81.7	118.8	886.4	6.85	10.9	7.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	75.3	115.1	833.7	6.97	11.1	7.2	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	72.0	113.4	806.6	7.04	11.2	7.1	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	89.4	110.5	756.9	5.50	8.5	6.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	84.8	107.5	726.1	5.58	8.6	6.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	82.3	105.9	709.2	5.62	8.6	6.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	79.8	104.4	692.6	5.66	8.7	6.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	77.2	102.8	675.3	5.71	8.7	6.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	74.6	101.3	657.8	5.76	8.8	6.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	71.9	99.8	640.0	5.82	8.9	6.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	64.7	96.3	592.5	5.66	9.2	6.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	69.2	98.4	622.0	5.87	9.0	6.3	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	55.8	91.6	531.3	5.81	9.5	5.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	50.1	89.1	491.2	5.93	9.8	5.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	57.4	82.6	450.7	4.97	7.9	5.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	49.7	78.8	405.6	5.13	8.2	5.2	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	45.7	77.1	381.7	5.22	8.4	5.0	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	43.0	76.1	365.8	5.28	8.5	4.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	53.2	76.2	385.8	4.61	7.2	5.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	49.6	74.1	365.7	4.66	7.4	4.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	46.2	72.8	347.9	4.76	7.5	4.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	41.7	70.6	322.6	4.66	7.7	4.6	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	42.4	71.4	327.7	4.85	7.7	4.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	38.6	69.3	305.1	4.71	7.9	4.4	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	37.0	68.8	296.0	4.74	8.0	4.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	30.2	65.3	254.3	4.62	8.4	3.9	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.5	64.4	231.0	4.65	8.7	3.6	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	38.1	59.2	239.1	3.89	6.3	4.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	33.4	57.4	217.8	3.99	6.5	3.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.8	55.7	195.6	3.97	6.8	3.5	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	30.0	56.4	202.1	4.06	6.7	3.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	26.2	54.6	182.6	3.94	7.0	3.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.4	55.1	184.2	4.00	7.0	3.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.8	54.0	170.3	3.97	7.2	3.2	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.5	51.5	151.3	3.75	7.4	2.9	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.9	50.9	130.9	3.73	7.7	2.6	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	41.7	56.5	223.3	3.53	5.4	4.0	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	38.3	54.9	210.0	3.57	5.5	3.8	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	34.4	53.1	194.5	3.59	5.7	3.7	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	30.2	51.4	177.1	3.61	5.9	3.4	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	28.0	50.4	167.6	3.61	6.0	3.3	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	25.5	49.5	156.8	3.60	6.1	3.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	46.6	51.6	203.6	3.28	4.4	3.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	42.8	50.2	191.9	3.33	4.5	3.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	35.1	48.7	169.5	3.17	4.8	3.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	38.6	48.8	179.1	3.37	4.6	3.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	32.4	47.5	160.0	3.20	4.9	3.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	29.3	46.2	148.9	3.22	5.1	3.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	33.8	47.3	163.8	3.39	4.8	3.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	31.2	46.5	155.2	3.40	5.0	3.3	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	25.6	44.7	135.5	3.23	5.3	3.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	28.5	45.7	145.9	3.40	5.1	3.2	6.75	8.00	6.00	0.500	4.00

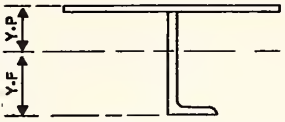


PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

60t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	23.8	44.1	128.3	3.23	5.4	2.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.6	44.8	135.4	3.39	5.3	3.0	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.7	43.3	120.1	3.21	5.5	2.8	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	19.6	42.5	111.3	3.19	5.7	2.6	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	26.9	40.3	117.9	2.83	4.4	2.9	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	24.3	39.3	109.8	2.84	4.5	2.8	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.4	38.3	100.4	2.85	4.7	2.6	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.8	37.8	95.0	2.84	4.8	2.5	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.1	37.2	89.0	2.83	4.9	2.4	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.3	36.6	82.5	2.80	5.1	2.3	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.4	35.9	75.0	2.76	5.2	2.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	21.6	33.4	82.9	2.45	3.8	2.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.6	32.8	77.4	2.46	3.9	2.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.4	32.1	71.1	2.46	4.1	2.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.1	31.7	67.3	2.45	4.2	2.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.7	31.2	63.1	2.44	4.3	2.0	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.4	30.7	59.0	2.38	4.4	1.9	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.3	30.8	58.6	2.41	4.4	1.9	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.2	30.5	55.0	2.39	4.5	1.8	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.7	30.3	53.3	2.37	4.6	1.8	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.7	29.7	49.6	2.31	4.6	1.7	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.6	29.8	49.3	2.32	4.7	1.7	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.0	29.6	47.3	2.31	4.7	1.6	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.2	29.1	44.1	2.25	4.8	1.5	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.6	28.3	37.7	2.15	5.0	1.3	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.8	25.9	47.9	2.02	3.5	1.8	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.3	25.4	44.0	2.02	3.6	1.7	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.5	24.9	39.1	1.99	3.7	1.6	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.4	24.3	36.1	1.94	3.8	1.5	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.5	24.6	36.4	1.97	3.8	1.5	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.5	23.9	33.3	1.90	3.9	1.4	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.4	24.2	33.1	1.93	3.9	1.4	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.6	23.6	30.4	1.87	4.0	1.3	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.2	23.7	29.3	1.86	4.1	1.2	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.5	23.1	26.9	1.80	4.1	1.2	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.0	23.1	25.2	1.78	4.2	1.1	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.4	22.4	23.0	1.71	4.3	1.0	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.3	20.3	31.3	1.66	2.8	1.5	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.1	20.0	28.9	1.66	2.9	1.4	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.1	19.6	26.9	1.62	2.9	1.4	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.1	19.1	24.5	1.58	3.0	1.3	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.7	19.7	25.9	1.64	3.0	1.3	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.8	19.2	23.9	1.60	3.1	1.2	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.8	19.5	24.1	1.62	3.1	1.2	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	6.9	18.8	21.9	1.55	3.2	1.2	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.0	19.1	22.2	1.57	3.1	1.2	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.3	18.5	20.3	1.52	3.2	1.1	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.9	19.2	22.0	1.59	3.2	1.1	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.2	18.7	20.2	1.54	3.2	1.1	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.6	18.3	18.5	1.49	3.3	1.0	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.9	18.8	19.5	1.53	3.3	1.0	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.4	18.4	18.1	1.49	3.3	1.0	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.8	17.9	16.4	1.43	3.4	0.9	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.9	18.3	16.8	1.46	3.4	0.9	1.94	4.00	4.00	0.250	1.00

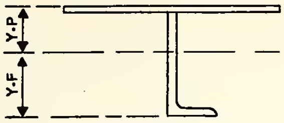


PROPERTIES OF COMBINED BEAM AND PLATE ⊏-L AND L

60t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.5	17.8	15.4	1.41	3.5	0.9	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	17.3	14.0	1.36	3.5	0.8	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.8	16.1	16.2	1.35	2.8	1.0	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.1	15.5	14.6	1.30	2.9	0.9	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.3	15.9	15.1	1.33	2.9	1.0	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.6	15.3	13.5	1.27	2.9	0.9	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.7	15.6	13.7	1.30	2.9	0.9	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.1	15.1	12.3	1.24	3.0	0.8	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.0	15.2	12.1	1.25	3.0	0.8	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	14.7	10.9	1.19	3.1	0.7	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	14.7	10.4	1.18	3.1	0.7	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	14.2	9.3	1.13	3.2	0.7	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.1	12.9	10.3	1.11	2.5	0.8	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.7	12.7	9.6	1.09	2.6	0.8	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.3	12.5	8.7	1.06	2.6	0.7	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	12.1	7.7	1.02	2.7	0.6	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	11.8	6.7	0.96	2.7	0.6	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	11.1	5.8	0.91	2.8	0.5	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	9.4	5.0	0.82	2.3	0.5	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	9.1	4.5	0.79	2.3	0.5	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	8.7	3.8	0.74	2.4	0.4	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.6	6.9	3.1	0.65	1.9	0.4	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.5	6.8	2.8	0.63	1.9	0.4	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	6.4	2.4	0.59	1.9	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	5.8	2.0	0.54	2.0	0.3	0.81	2.00	1.50	0.250	0.50



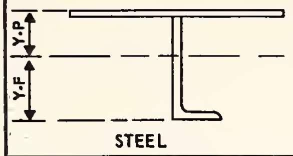
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

60t

14.02# PLATE WEIGHT

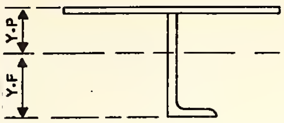
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	90.5	138.4	1,003.8	6.78	11.1	7.3	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	84.0	134.8	949.2	6.87	11.3	7.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	77.3	131.3	892.5	6.97	11.5	6.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	73.8	129.7	863.1	7.02	11.7	6.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	92.3	123.5	810.5	5.56	8.8	6.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	87.5	120.6	778.0	5.63	8.9	6.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	84.8	119.1	760.1	5.67	9.0	6.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	82.2	117.6	742.5	5.70	9.0	6.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	79.5	116.1	724.0	5.75	9.1	6.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	76.7	114.7	705.3	5.79	9.2	6.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	73.9	113.3	686.2	5.84	9.3	6.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	66.6	109.3	635.1	5.67	9.5	5.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	71.0	111.9	666.8	5.88	9.4	6.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	57.3	104.9	568.6	5.79	9.9	5.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	51.2	102.7	524.5	5.87	10.2	5.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	59.0	94.0	484.0	4.99	8.2	5.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	50.9	90.5	434.9	5.11	8.5	4.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	46.7	89.0	408.6	5.18	8.8	4.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	43.9	88.2	390.9	5.22	8.9	4.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	54.8	86.7	414.4	4.63	7.6	4.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	51.0	84.7	392.7	4.67	7.7	4.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	47.3	83.6	373.1	4.75	7.9	4.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	42.7	81.1	345.5	4.63	8.1	4.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	43.4	82.4	350.7	4.81	8.1	4.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	39.5	80.0	326.2	4.67	8.3	4.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	37.8	79.5	316.1	4.69	8.4	4.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	30.8	75.8	270.6	4.54	8.8	3.6	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.9	75.2	244.5	4.53	9.1	3.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	39.2	68.0	257.0	3.89	6.6	3.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	34.2	66.3	233.3	3.96	6.8	3.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	29.4	64.6	208.8	3.91	7.1	3.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	30.6	65.5	215.9	4.01	7.0	3.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	26.7	63.4	194.5	3.87	7.3	3.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.9	64.1	196.0	3.93	7.3	3.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	24.2	63.0	180.8	3.88	7.5	2.9	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.9	59.9	160.3	3.66	7.7	2.7	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.1	59.5	137.7	3.60	8.0	2.3	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	42.9	64.4	240.6	3.55	5.6	3.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	39.4	62.8	226.1	3.57	5.7	3.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	35.3	61.1	209.2	3.58	5.9	3.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	30.9	59.3	190.0	3.58	6.1	3.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	28.6	58.4	179.5	3.57	6.3	3.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	26.1	57.4	167.5	3.54	6.4	2.9	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	48.0	59.0	220.9	3.32	4.6	3.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	43.9	57.7	208.1	3.35	4.7	3.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	36.1	55.7	182.9	3.18	5.1	3.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	39.6	56.3	193.9	3.37	4.9	3.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	33.3	54.5	172.4	3.20	5.2	3.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	30.0	53.2	160.1	3.21	5.3	3.0	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	34.6	54.8	176.8	3.38	5.1	3.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	31.9	54.0	167.2	3.38	5.2	3.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	26.2	51.8	145.3	3.20	5.5	2.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	29.1	53.2	156.9	3.37	5.4	3.0	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 9/16 x 21.9 L	21.86	24.3	51.1	137.4	3.19	5.7	2.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	26.1	52.3	145.1	3.34	5.6	2.8	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	22.1	50.3	128.2	3.16	5.8	2.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.9	49.5	118.5	3.12	5.9	2.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	27.6	46.4	127.2	2.82	4.6	2.7	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	24.9	45.5	118.1	2.83	4.7	2.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.9	44.5	107.7	2.82	4.9	2.4	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.2	43.9	101.6	2.80	5.0	2.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.4	43.3	94.9	2.77	5.2	2.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.6	42.7	87.8	2.74	5.3	2.1	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.6	41.9	79.5	2.68	5.4	1.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	22.2	38.6	89.5	2.44	4.0	2.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	20.1	38.0	83.3	2.44	4.1	2.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.7	37.3	76.2	2.43	4.3	2.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.4	36.9	72.0	2.41	4.4	2.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.0	36.4	67.2	2.38	4.5	1.8	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.7	35.7	62.8	2.33	4.6	1.8	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.5	35.9	62.2	2.35	4.6	1.7	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.4	35.6	58.3	2.31	4.7	1.6	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 12.3 L	12.27	11.9	35.3	56.4	2.30	4.7	1.6	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.8	34.6	52.4	2.23	4.8	1.5	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.7	34.7	52.0	2.24	4.8	1.5	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.2	34.5	49.9	2.22	4.9	1.4	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.3	33.8	46.4	2.16	5.0	1.4	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.7	32.9	39.5	2.05	5.1	1.2	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.1	30.0	51.4	2.00	3.6	1.7	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.6	29.6	47.1	1.98	3.8	1.6	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.7	29.0	41.6	1.94	3.9	1.4	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.6	28.3	38.3	1.88	4.0	1.4	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.6	28.6	38.5	1.90	4.0	1.3	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.6	27.8	35.2	1.84	4.1	1.3	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.5	28.1	34.9	1.86	4.1	1.2	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.7	27.4	32.0	1.79	4.2	1.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.3	27.5	30.8	1.79	4.2	1.1	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.6	26.8	28.2	1.72	4.3	1.1	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.0	26.7	26.3	1.69	4.4	1.0	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.4	25.9	24.0	1.63	4.4	0.9	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.6	23.6	33.7	1.64	2.9	1.4	5.44	4.00	4.00	0.750	3.00
5/8 15.7 L	15.67	10.3	23.3	31.0	1.63	3.0	1.3	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.3	22.8	28.7	1.59	3.1	1.3	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.2	22.1	26.1	1.53	3.2	1.2	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.8	22.9	27.6	1.60	3.1	1.2	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.9	22.3	25.4	1.55	3.2	1.1	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.9	22.6	25.6	1.57	3.2	1.1	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.1	21.8	23.2	1.50	3.3	1.1	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.2	22.1	23.5	1.52	3.3	1.1	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.4	21.5	21.4	1.47	3.3	1.0	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.0	22.3	23.2	1.53	3.3	1.0	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.3	21.7	21.3	1.48	3.4	1.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.7	21.1	19.4	1.42	3.4	0.9	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.0	21.7	20.5	1.47	3.4	0.9	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.5	21.3	19.0	1.42	3.5	0.9	2.25	4.00	3.50	0.312	1.25



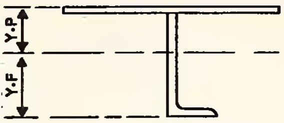
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	4.9	20.6	17.2	1.37	3.5	0.8	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.0	21.0	17.5	1.39	3.5	0.8	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.5	20.5	16.1	1.34	3.6	0.8	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	19.9	14.6	1.29	3.6	0.7	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.9	18.6	17.2	1.30	2.9	0.9	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.2	17.8	15.4	1.25	3.0	0.9	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.4	18.3	15.9	1.28	3.0	0.9	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.7	17.6	14.2	1.22	3.0	0.8	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.8	17.9	14.4	1.24	3.0	0.8	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.2	17.3	12.9	1.19	3.1	0.7	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.1	17.4	12.7	1.19	3.1	0.7	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.6	16.8	11.4	1.13	3.2	0.7	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.4	16.8	10.8	1.12	3.2	0.6	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	16.1	9.7	1.07	3.2	0.6	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.2	14.8	10.9	1.07	2.6	0.7	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.8	14.5	10.1	1.04	2.7	0.7	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.4	14.3	9.2	1.01	2.7	0.6	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	13.8	8.1	0.96	2.8	0.6	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.5	13.2	6.9	0.91	2.8	0.5	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	12.4	6.0	0.85	2.9	0.5	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.3	10.5	5.3	0.78	2.3	0.5	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	2.0	10.2	4.7	0.75	2.4	0.5	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	9.6	4.0	0.70	2.4	0.4	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.7	7.7	3.2	0.62	1.9	0.4	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.5	7.5	2.9	0.59	2.0	0.4	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.3	7.0	2.5	0.56	2.0	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	6.3	2.1	0.51	2.0	0.3	0.81	2.00	1.50	0.250	0.50



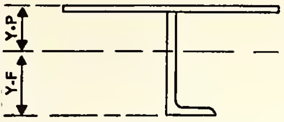
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

60t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	92.9	155.6	1,068.7	6.79	11.5	6.9	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	86.1	152.1	1,010.1	6.86	11.7	6.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	79.0	148.9	948.8	6.94	12.0	6.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	75.4	147.5	917.0	6.98	12.2	6.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	95.0	137.6	864.2	5.60	9.1	6.3	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	90.0	134.8	829.6	5.66	9.2	6.2	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	87.2	133.4	810.5	5.69	9.3	6.1	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	84.4	132.0	791.7	5.73	9.4	6.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	81.6	130.6	771.9	5.76	9.5	5.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	78.7	129.2	751.8	5.80	9.6	5.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	75.7	127.9	731.2	5.83	9.7	5.7	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	68.3	123.5	676.3	5.66	9.9	5.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	72.7	126.7	710.2	5.87	9.8	5.6	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	58.5	119.4	604.0	5.75	10.3	5.1	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	52.2	117.5	555.7	5.79	10.6	4.7	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	60.6	106.4	516.2	4.98	8.5	4.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	52.0	103.1	462.7	5.07	8.9	4.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	47.6	101.8	433.7	5.12	9.1	4.3	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	44.6	101.2	414.2	5.14	9.3	4.1	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	56.2	98.1	442.1	4.62	7.9	4.5	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	52.2	96.2	418.6	4.65	8.0	4.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	48.3	95.3	396.9	4.71	8.2	4.2	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	43.7	92.5	367.1	4.59	8.4	4.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	44.2	94.3	372.2	4.75	8.4	3.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	40.2	91.5	345.9	4.61	8.6	3.8	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	38.5	91.1	334.7	4.61	8.7	3.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	31.4	87.1	285.4	4.44	9.1	3.3	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.3	86.6	256.7	4.40	9.4	3.0	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	40.1	77.4	274.0	3.86	6.8	3.5	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	34.9	76.0	247.9	3.91	7.1	3.3	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	29.9	74.1	221.0	3.84	7.4	3.0	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	31.1	75.3	228.5	3.93	7.3	3.0	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.2	72.9	205.4	3.79	7.6	2.8	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	27.3	73.8	206.8	3.84	7.6	2.8	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	24.5	72.6	190.2	3.78	7.8	2.6	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.2	68.9	168.5	3.56	7.9	2.4	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.3	68.6	143.7	3.47	8.3	2.1	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	44.0	73.0	257.4	3.55	5.8	3.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	40.3	71.4	241.6	3.56	6.0	3.4	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	36.1	69.7	223.0	3.56	6.2	3.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	31.6	67.9	202.0	3.53	6.4	3.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	29.2	67.0	190.5	3.51	6.5	2.8	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	26.5	66.0	177.3	3.47	6.7	2.7	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	49.2	67.1	237.8	3.33	4.8	3.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	45.0	65.7	223.7	3.35	5.0	3.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	37.1	63.2	195.7	3.17	5.3	3.1	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	40.4	64.4	208.0	3.36	5.1	3.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	34.1	62.1	184.2	3.18	5.4	3.0	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	30.7	60.8	170.7	3.18	5.6	2.8	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	35.2	62.9	189.1	3.36	5.4	3.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	32.4	62.0	178.4	3.34	5.5	2.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	26.8	59.4	154.5	3.15	5.8	2.6	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	29.6	61.2	167.0	3.32	5.6	2.7	6.75	8.00	6.00	0.500	4.00



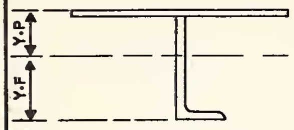
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
C-L AND L

60t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	24.7	58.7	145.7	3.13	5.9	2.5	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	26.5	60.2	153.9	3.27	5.8	2.6	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	22.5	57.8	135.7	3.09	6.0	2.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.2	56.9	125.0	3.04	6.2	2.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	28.3	53.0	135.9	2.80	4.8	2.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	25.4	52.1	125.9	2.79	5.0	2.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	22.3	51.1	114.4	2.77	5.1	2.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.6	50.5	107.7	2.74	5.2	2.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.7	49.8	100.4	2.71	5.4	2.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.9	49.1	92.5	2.66	5.5	1.9	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.8	48.2	83.5	2.59	5.6	1.7	3.98	7.00	4.00	0.375	2:62
6 x 4 x 7/8 x 27.2 L	27.13	22.7	44.2	95.7	2.41	4.2	2.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	20.5	43.5	88.8	2.40	4.3	2.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.1	42.8	81.0	2.38	4.5	1.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.7	42.4	76.3	2.36	4.6	1.8	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.2	41.8	71.0	2.32	4.7	1.7	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.9	41.0	66.2	2.26	4.8	1.6	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.7	41.3	65.6	2.28	4.8	1.6	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.6	40.9	61.3	2.24	4.9	1.5	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.0	40.6	59.2	2.22	4.9	1.5	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.0	39.6	54.9	2.15	5.0	1.4	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.9	39.8	54.4	2.16	5.0	1.4	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.3	39.6	52.1	2.13	5.1	1.3	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.4	38.8	48.4	2.07	5.1	1.2	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.7	37.6	41.0	1.95	5.3	1.1	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.4	34.4	54.7	1.96	3.8	1.6	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.8	33.9	49.9	1.93	3.9	1.5	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.8	33.2	43.9	1.88	4.1	1.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.8	32.3	40.3	1.82	4.1	1.2	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.8	32.7	40.5	1.84	4.1	1.2	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.8	31.8	36.9	1.77	4.2	1.2	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.6	32.2	36.6	1.78	4.2	1.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.8	31.3	33.5	1.72	4.3	1.1	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.4	31.3	32.1	1.71	4.4	1.0	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.7	30.5	29.4	1.65	4.4	1.0	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.1	30.3	27.3	1.61	4.5	0.9	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.5	29.3	24.8	1.55	4.5	0.8	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.8	27.0	36.0	1.61	3.0	1.3	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.5	26.7	32.9	1.59	3.1	1.2	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.5	26.1	30.4	1.55	3.2	1.2	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.4	25.3	27.6	1.49	3.3	1.1	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.9	26.2	29.2	1.55	3.3	1.1	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.0	25.5	26.7	1.50	3.3	1.0	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.1	25.8	26.9	1.51	3.3	1.0	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.2	24.8	24.4	1.44	3.4	1.0	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.3	25.2	24.7	1.46	3.4	1.0	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.5	24.4	22.5	1.41	3.5	0.9	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.1	25.4	24.3	1.47	3.4	1.0	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.4	24.7	22.3	1.42	3.5	0.9	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.8	23.9	20.3	1.36	3.5	0.8	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.1	24.7	21.4	1.40	3.5	0.9	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.6	24.1	19.8	1.36	3.6	0.8	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	5.0	23.2	17.9	1.30	3.6	0.8	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.1	23.8	18.2	1.33	3.6	0.8	1.94	4.00	4.00	0.250	1.00



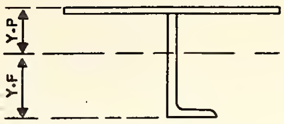
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.6	23.1	16.7	1.27	3.7	0.7	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.1	22.3	15.1	1.22	3.7	0.7	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	6.0	21.1	18.1	1.26	3.0	0.9	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.2	20.2	16.1	1.20	3.1	0.8	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.4	20.7	16.7	1.23	3.1	0.8	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.8	19.9	14.9	1.17	3.1	0.7	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.8	20.2	15.1	1.19	3.1	0.7	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.2	19.5	13.5	1.13	3.2	0.7	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.1	19.6	13.2	1.13	3.2	0.7	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.6	18.8	11.8	1.08	3.2	0.6	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.4	18.7	11.2	1.06	3.3	0.6	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	17.9	10.1	1.01	3.3	0.6	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.3	16.6	11.4	1.02	2.7	0.7	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.9	16.3	10.5	0.99	2.7	0.6	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.4	15.9	9.6	0.96	2.8	0.6	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	3.0	15.3	8.4	0.92	2.8	0.6	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.5	14.5	7.2	0.86	2.9	0.5	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	13.6	6.2	0.80	2.9	0.5	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.3	11.6	5.5	0.74	2.4	0.5	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	2.0	11.1	4.9	0.71	2.4	0.4	1.31	2.50	2.00	0.312	0.78



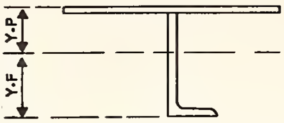
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	97.1	194.6	1,194.2	6.74	12.3	6.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	89.7	191.5	1,126.2	6.78	12.6	5.9	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	82.0	188.8	1,054.4	6.80	12.9	5.6	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	78.1	187.6	1,016.9	6.81	13.0	5.4	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	99.9	169.7	970.8	5.63	9.7	5.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	94.4	167.2	931.3	5.67	9.9	5.6	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	91.3	165.8	909.3	5.69	10.0	5.5	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	88.4	164.6	887.6	5.71	10.0	5.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	85.2	163.3	864.6	5.73	10.1	5.3	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	82.1	162.2	841.1	5.75	10.3	5.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	78.8	161.0	816.9	5.77	10.4	5.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	71.3	155.6	754.7	5.59	10.6	4.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	75.5	160.0	792.1	5.79	10.5	5.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	60.7	152.1	669.5	5.60	11.0	4.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	53.8	150.6	612.0	5.58	11.4	4.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	63.2	134.4	577.5	4.92	9.1	4.3	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	53.9	131.6	513.9	4.94	9.5	3.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	49.0	130.7	479.2	4.94	9.8	3.7	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	45.8	130.4	455.8	4.93	9.9	3.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	58.6	123.8	494.8	4.57	8.4	4.0	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	54.3	122.0	467.3	4.56	8.6	3.8	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	50.0	121.6	440.9	4.58	8.8	3.6	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	45.3	118.0	406.9	4.45	9.0	3.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	45.5	120.9	411.2	4.58	9.0	3.4	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	41.5	117.2	381.5	4.44	9.2	3.3	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	39.6	116.9	368.2	4.43	9.3	3.1	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.3	112.1	311.5	4.21	9.7	2.8	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.9	111.9	277.7	4.13	10.0	2.5	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	41.7	98.4	305.8	3.78	7.3	3.1	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	36.0	97.3	274.3	3.77	7.6	2.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	30.8	95.1	242.7	3.67	7.9	2.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	32.0	97.0	251.0	3.75	7.8	2.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.9	93.7	224.6	3.60	8.0	2.4	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.0	95.0	225.7	3.63	8.1	2.4	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.1	93.6	206.5	3.55	8.2	2.2	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.8	88.6	182.6	3.34	8.4	2.1	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.7	88.2	153.7	3.20	8.7	1.7	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	45.9	92.2	289.3	3.51	6.3	3.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	42.0	90.7	270.7	3.50	6.5	3.0	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	37.5	88.9	248.7	3.47	6.6	2.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	32.6	87.0	223.8	3.41	6.9	2.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	30.1	86.0	210.2	3.37	7.0	2.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.3	84.8	194.8	3.31	7.1	2.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	51.3	85.2	270.3	3.32	5.3	3.2	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	46.8	83.9	253.3	3.32	5.4	3.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	38.7	80.2	220.1	3.13	5.7	2.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	41.9	82.5	234.4	3.31	5.6	2.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	35.4	79.0	206.3	3.12	5.8	2.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	31.8	77.7	190.3	3.09	6.0	2.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	36.3	80.9	211.6	3.26	5.8	2.6	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	33.4	79.9	198.7	3.23	6.0	2.5	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	27.6	76.1	171.0	3.03	6.2	2.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	30.4	79.0	185.1	3.18	6.1	2.3	6.75	8.00	6.00	0.500	4.00



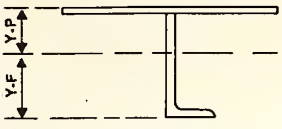
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
C-L AND L

60t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	25.5	75.3	160.6	2.99	6.3	2.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.1	77.8	169.6	3.12	6.3	2.2	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.1	74.2	148.8	2.94	6.4	2.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.7	73.1	136.4	2.87	6.6	1.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	29.3	67.7	152.2	2.73	5.2	2.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	26.3	66.6	140.2	2.70	5.3	2.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.0	65.4	126.5	2.65	5.5	1.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.2	64.7	118.6	2.61	5.6	1.8	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.2	63.8	109.9	2.56	5.7	1.7	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.3	62.9	100.8	2.50	5.8	1.6	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.1	61.7	90.3	2.41	6.0	1.5	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	23.6	56.4	107.1	2.34	4.5	1.9	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.2	55.7	98.9	2.31	4.7	1.8	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.6	54.8	89.4	2.27	4.8	1.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.1	54.2	83.9	2.23	4.9	1.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.6	53.4	77.7	2.19	5.0	1.5	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.3	52.2	72.2	2.12	5.1	1.4	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.0	52.7	71.3	2.13	5.1	1.4	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.8	52.0	66.3	2.08	5.2	1.3	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.3	51.6	64.0	2.06	5.2	1.2	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.2	50.3	59.1	1.99	5.3	1.2	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.1	50.5	58.5	1.99	5.3	1.2	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.5	50.2	55.9	1.96	5.3	1.1	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.6	48.9	51.8	1.90	5.4	1.1	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.9	47.0	43.5	1.77	5.5	0.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.9	43.8	60.5	1.87	4.1	1.4	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.2	43.1	54.9	1.83	4.2	1.3	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.1	42.0	47.8	1.76	4.3	1.1	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.0	40.8	43.7	1.69	4.4	1.1	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.0	41.3	43.9	1.71	4.4	1.1	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.0	39.9	39.9	1.64	4.4	1.0	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.8	40.4	39.4	1.64	4.5	1.0	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.0	39.1	36.0	1.58	4.5	0.9	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.5	39.1	34.4	1.56	4.6	0.9	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.8	37.8	31.4	1.50	4.6	0.8	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.2	37.4	29.0	1.46	4.7	0.8	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.6	35.9	26.3	1.40	4.7	0.7	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.2	34.3	40.0	1.54	3.3	1.2	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.8	33.8	36.3	1.50	3.4	1.1	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.8	32.9	33.4	1.45	3.4	1.0	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.7	31.7	30.2	1.40	3.5	1.0	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.2	33.0	31.9	1.45	3.5	1.0	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.3	32.0	29.1	1.39	3.5	0.9	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.3	32.4	29.2	1.40	3.5	0.9	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.4	30.9	26.4	1.34	3.6	0.9	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.5	31.4	26.7	1.35	3.6	0.9	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.7	30.3	24.3	1.30	3.6	0.8	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.3	31.6	26.3	1.35	3.6	0.8	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.6	30.6	24.0	1.30	3.7	0.8	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.9	29.5	21.8	1.25	3.7	0.7	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.2	30.5	23.0	1.28	3.7	0.8	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.7	29.6	21.2	1.24	3.7	0.7	2.25	4.00	3.50	0.312	1.25



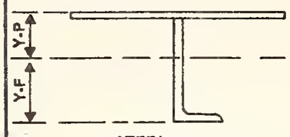
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

60t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.1	28.3	19.1	1.18	3.8	0.7	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.2	29.0	19.4	1.20	3.8	0.7	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.7	27.9	17.7	1.15	3.8	0.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.2	26.8	16.1	1.10	3.8	0.6	1.69	4.00	3.00	0.250	1.00



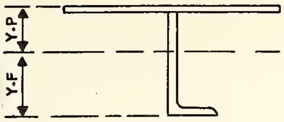
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

60t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	100.4	238.2	1,307.0	6.63	13.0	5.5	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	92.5	235.4	1,228.8	6.62	13.3	5.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	84.4	233.1	1,146.0	6.60	13.6	4.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	80.2	232.2	1,102.6	6.59	13.8	4.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	104.0	205.6	1,070.3	5.60	10.3	5.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	98.0	203.3	1,025.1	5.62	10.5	5.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	94.8	202.0	999.9	5.63	10.6	4.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	91.5	200.9	974.8	5.63	10.6	4.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	88.2	199.8	948.2	5.64	10.8	4.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	84.8	198.8	921.0	5.64	10.9	4.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	81.3	197.8	893.0	5.64	11.0	4.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	73.7	191.1	824.1	5.46	11.2	4.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	77.8	197.0	864.2	5.64	11.1	4.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	62.3	188.0	725.4	5.40	11.6	3.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	55.0	186.9	659.0	5.34	12.0	3.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	65.3	165.2	631.6	4.81	9.7	3.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	55.3	162.9	557.6	4.77	10.1	3.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	50.2	162.3	517.3	4.73	10.3	3.2	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	46.8	162.2	490.1	4.70	10.5	3.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	60.5	152.2	541.4	4.46	8.9	3.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	55.9	150.5	509.8	4.43	9.1	3.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	51.4	150.3	478.5	4.42	9.3	3.2	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	46.5	145.9	440.7	4.29	9.5	3.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	46.5	149.8	443.9	4.39	9.5	3.0	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	42.5	145.2	411.3	4.24	9.7	2.8	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	40.5	145.0	395.9	4.21	9.8	2.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.9	139.0	332.7	3.98	10.1	2.4	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.4	138.7	294.3	3.85	10.4	2.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	43.0	121.4	333.3	3.66	7.8	2.7	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	36.9	120.4	296.5	3.61	8.0	2.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.4	117.7	260.5	3.48	8.3	2.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	32.6	120.2	269.3	3.55	8.3	2.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.5	116.0	240.2	3.39	8.4	2.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.5	117.6	241.0	3.42	8.5	2.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.5	115.8	219.5	3.32	8.6	1.9	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	22.2	109.2	193.9	3.12	8.7	1.8	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.9	108.2	161.6	2.95	9.0	1.5	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	47.5	113.2	317.7	3.43	6.7	2.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	43.3	111.6	296.2	3.40	6.8	2.7	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	38.5	109.7	270.8	3.35	7.0	2.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	33.4	107.5	242.2	3.26	7.2	2.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	30.8	106.2	226.7	3.21	7.4	2.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.9	104.7	209.2	3.14	7.5	2.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	53.0	105.1	299.5	3.27	5.7	2.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	48.1	103.7	279.5	3.25	5.8	2.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	39.9	98.6	241.5	3.05	6.1	2.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	43.0	102.2	257.3	3.21	6.0	2.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	36.5	97.4	225.5	3.02	6.2	2.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	32.6	95.9	206.9	2.97	6.3	2.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	37.2	100.3	230.7	3.14	6.2	2.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	34.1	99.1	215.8	3.09	6.3	2.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	28.3	93.9	184.8	2.89	6.5	2.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.0	97.9	200.1	3.03	6.5	2.0	6.75	8.00	6.00	0.500	4.00



STEEL

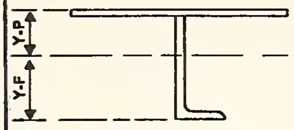
PROPERTIES OF COMBINED BEAM AND PLATE

[-L AND L

60t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.0	92.9	172.9	2.84	6.6	1.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.6	96.4	182.5	2.95	6.6	1.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.6	91.5	159.6	2.77	6.8	1.7	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.1	90.0	145.6	2.69	6.9	1.6	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.2	83.3	166.3	2.64	5.5	2.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	27.0	82.1	152.3	2.59	5.6	1.9	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.5	80.6	136.5	2.52	5.8	1.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.6	79.6	127.5	2.47	5.9	1.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.6	78.4	117.7	2.41	6.0	1.5	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.6	77.1	107.4	2.34	6.1	1.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.4	75.3	95.8	2.25	6.2	1.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.3	69.4	116.9	2.26	4.8	1.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.8	68.4	107.3	2.21	4.9	1.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.0	67.2	96.5	2.15	5.1	1.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.5	66.3	90.1	2.11	5.1	1.4	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.9	65.3	83.2	2.05	5.2	1.3	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.6	63.6	77.1	1.99	5.3	1.2	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.3	64.1	76.0	1.99	5.3	1.2	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	13.1	63.1	70.4	1.94	5.4	1.1	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.5	62.5	67.9	1.91	5.4	1.1	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.4	60.7	62.6	1.84	5.5	1.0	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.3	60.9	61.9	1.84	5.5	1.0	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.7	60.3	59.0	1.81	5.5	1.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.8	58.6	54.5	1.75	5.6	0.9	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	8.0	55.6	45.5	1.62	5.7	0.8	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	15.3	53.4	65.5	1.77	4.3	1.2	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.5	52.4	59.0	1.72	4.4	1.1	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.4	50.7	51.0	1.64	4.5	1.0	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.2	49.0	46.6	1.58	4.6	0.9	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.2	49.7	46.7	1.59	4.6	0.9	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.2	47.7	42.3	1.52	4.6	0.9	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	9.0	48.2	41.7	1.52	4.6	0.9	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.1	46.4	38.0	1.46	4.7	0.8	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.7	46.2	36.2	1.44	4.7	0.8	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.9	44.4	33.0	1.38	4.8	0.7	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.3	43.7	30.4	1.33	4.8	0.7	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.7	41.7	27.6	1.28	4.8	0.7	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.6	41.7	43.5	1.46	3.5	1.0	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	11.1	40.8	39.2	1.41	3.5	1.0	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	10.0	39.6	36.0	1.37	3.6	0.9	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.9	37.9	32.4	1.31	3.6	0.9	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.4	39.6	34.2	1.35	3.6	0.9	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.5	38.1	31.2	1.30	3.7	0.8	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.5	38.6	31.2	1.31	3.7	0.8	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.6	36.6	28.2	1.24	3.7	0.8	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.6	37.2	28.5	1.25	3.7	0.8	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.8	35.6	25.8	1.20	3.8	0.7	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.4	37.4	27.9	1.25	3.8	0.7	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.7	35.9	25.5	1.20	3.8	0.7	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	6.0	34.4	23.1	1.15	3.8	0.7	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.4	35.6	24.3	1.18	3.8	0.7	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.8	34.4	22.4	1.14	3.8	0.7	2.25	4.00	3.50	0.312	1.25



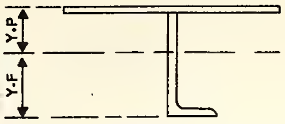
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

60t

20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.2	32.7	20.1	1.08	3.9	0.6	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.3	33.4	20.5	1.10	3.9	0.6	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.8	32.0	18.6	1.05	3.9	0.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.3	30.4	16.9	1.01	3.9	0.6	1.69	4.00	3.00	0.250	1.00

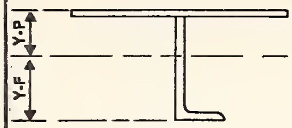


PROPERTIES OF COMBINED BEAM AND PLATE ⊏-L AND L

60t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	103.3	287.2	1,409.9	6.46	13.7	4.9	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	94.9	284.7	1,321.0	6.42	13.9	4.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	86.3	282.7	1,227.0	6.36	14.2	4.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	81.9	282.0	1,177.7	6.33	14.4	4.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	107.5	246.1	1,164.1	5.53	10.8	4.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	101.1	243.9	1,112.6	5.52	11.0	4.6	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	97.6	242.8	1,083.8	5.52	11.1	4.5	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	94.2	241.7	1,055.2	5.51	11.2	4.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	90.6	240.7	1,024.8	5.50	11.3	4.3	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	87.0	239.8	993.7	5.49	11.4	4.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	83.3	239.0	961.6	5.48	11.5	4.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	75.6	230.8	886.5	5.29	11.7	3.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	79.6	238.3	928.6	5.46	11.7	3.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	63.7	227.9	774.4	5.18	12.2	3.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	56.0	227.0	699.3	5.08	12.5	3.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	67.0	199.6	680.2	4.66	10.2	3.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	56.5	197.4	595.9	4.57	10.5	3.0	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	51.1	196.9	550.1	4.50	10.8	2.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.5	196.9	519.2	4.45	10.9	2.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	62.1	183.7	583.4	4.32	9.4	3.2	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	57.3	181.9	547.5	4.28	9.6	3.0	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	52.5	181.9	511.5	4.24	9.8	2.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	47.5	176.4	470.2	4.10	9.9	2.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	47.4	181.5	472.0	4.17	10.0	2.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	43.4	175.7	436.9	4.03	10.1	2.5	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	41.3	175.4	419.6	3.99	10.2	2.4	7.39	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.5	167.8	350.6	3.74	10.5	2.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.7	167.1	308.0	3.60	10.7	1.8	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	44.0	146.5	357.6	3.52	8.1	2.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	37.6	145.4	315.6	3.43	8.4	2.2	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.0	141.8	275.8	3.28	8.6	1.9	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.1	145.0	284.9	3.35	8.6	2.0	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.0	139.5	253.4	3.19	8.7	1.8	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.0	141.5	253.9	3.21	8.8	1.8	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.9	139.0	230.4	3.10	8.9	1.7	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	22.6	130.6	203.4	2.92	9.0	1.6	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	18.2	128.6	168.1	2.73	9.3	1.3	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	48.8	136.4	343.4	3.33	7.0	2.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	44.3	134.6	318.9	3.28	7.2	2.4	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	39.4	132.3	290.2	3.21	7.4	2.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	34.1	129.5	258.1	3.11	7.6	2.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.4	127.9	240.8	3.04	7.7	1.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.4	125.9	221.4	2.96	7.8	1.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	54.4	127.0	326.2	3.19	6.0	2.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	49.3	125.4	303.1	3.15	6.1	2.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	41.0	118.6	260.8	2.95	6.4	2.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	43.9	123.6	277.6	3.10	6.3	2.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	37.4	117.2	242.6	2.90	6.5	2.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.4	115.4	221.6	2.84	6.6	1.9	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	37.9	121.2	247.4	3.01	6.5	2.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	34.7	119.8	230.6	2.95	6.6	1.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	28.8	112.9	196.7	2.74	6.8	1.7	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.5	118.1	213.1	2.88	6.8	1.8	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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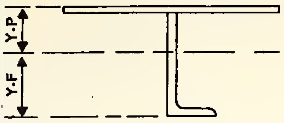
60t

22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.5	111.5	183.5	2.69	6.9	1.6	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.1	116.0	193.4	2.78	6.9	1.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.0	109.6	168.8	2.61	7.0	1.5	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	21.5	107.5	153.4	2.52	7.1	1.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.9	100.1	178.7	2.53	5.8	1.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	27.6	98.5	163.0	2.47	5.9	1.7	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.0	96.4	145.3	2.39	6.1	1.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.0	95.0	135.2	2.33	6.1	1.4	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.0	93.3	124.4	2.26	6.2	1.3	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.9	91.4	113.1	2.19	6.3	1.2	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.6	88.8	100.5	2.09	6.4	1.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.9	83.1	125.6	2.16	5.1	1.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.2	81.7	114.8	2.10	5.2	1.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.4	80.0	102.6	2.03	5.3	1.3	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.9	78.7	95.5	1.98	5.3	1.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.2	77.2	87.9	1.92	5.4	1.1	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.8	74.9	81.3	1.86	5.5	1.1	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.5	75.5	80.0	1.86	5.5	1.1	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	13.3	74.0	74.0	1.80	5.6	1.0	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.7	73.1	71.2	1.77	5.6	1.0	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.6	70.6	65.6	1.71	5.6	0.9	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.5	70.8	64.7	1.70	5.6	0.9	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.8	70.0	61.6	1.67	5.7	0.9	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.9	67.6	56.9	1.61	5.7	0.8	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	8.1	63.4	47.3	1.49	5.8	0.7	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	15.7	63.1	69.9	1.68	4.5	1.1	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.8	61.6	62.6	1.62	4.5	1.0	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.6	59.1	53.8	1.53	4.7	0.9	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.4	56.9	49.1	1.47	4.7	0.9	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.4	57.6	49.1	1.48	4.7	0.9	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.4	55.0	44.5	1.41	4.8	0.8	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	9.2	55.4	43.7	1.41	4.8	0.8	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.3	53.1	39.8	1.35	4.8	0.7	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.8	52.6	37.8	1.32	4.8	0.7	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	7.1	50.3	34.4	1.27	4.9	0.7	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.4	49.0	31.6	1.23	4.9	0.6	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.8	46.5	28.7	1.17	4.9	0.6	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.9	49.0	46.6	1.38	3.6	1.0	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	11.3	47.6	41.8	1.33	3.7	0.9	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	10.3	46.0	38.3	1.28	3.7	0.8	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	9.1	43.8	34.4	1.22	3.8	0.8	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.6	45.7	36.2	1.26	3.8	0.8	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.7	43.8	33.0	1.21	3.8	0.8	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.6	44.3	33.0	1.22	3.8	0.7	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.7	41.8	29.8	1.16	3.9	0.7	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.8	42.5	30.1	1.17	3.9	0.7	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	7.0	40.4	27.2	1.11	3.9	0.7	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.6	42.5	29.4	1.16	3.9	0.7	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.9	40.6	26.8	1.11	3.9	0.7	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	6.2	38.7	24.3	1.06	3.9	0.6	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.5	40.1	25.5	1.09	3.9	0.6	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.9	38.5	23.5	1.05	4.0	0.6	2.25	4.00	3.50	0.312	1.25



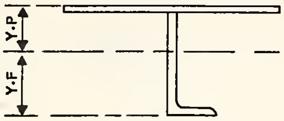
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

60t

22.95# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
4 x 3 x 5/16 x 7.2 L	7.11	5.3	36.3	21.1	1.00	4.0	0.6	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.4	37.2	21.4	1.01	4.0	0.6	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.9	35.3	19.5	0.97	4.0	0.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.4	33.3	17.7	0.92	4.0	0.5	1.69	4.00	3.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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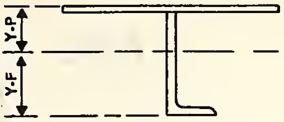
25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	105.6	339.6	1,499.9	6.27	14.2	4.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	96.8	337.2	1,400.7	6.20	14.5	4.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	87.8	335.4	1,295.9	6.11	14.8	3.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	83.2	334.7	1,241.2	6.06	14.9	3.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	110.4	289.5	1,248.6	5.42	11.3	4.3	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	103.7	287.3	1,190.6	5.39	11.5	4.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	100.0	286.3	1,158.3	5.38	11.6	4.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	96.4	285.3	1,126.1	5.36	11.7	3.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	92.7	284.3	1,092.0	5.34	11.8	3.8	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	88.9	283.4	1,057.0	5.32	11.9	3.7	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	85.0	282.6	1,021.1	5.29	12.0	3.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	77.2	272.8	940.4	5.10	12.2	3.4	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	81.1	282.0	984.1	5.26	12.1	3.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	64.7	269.8	815.8	4.95	12.6	3.0	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	56.8	268.7	732.8	4.82	12.9	2.7	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	68.4	235.8	722.3	4.49	10.6	3.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	57.5	233.4	628.2	4.37	10.9	2.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	51.8	232.7	577.5	4.28	11.1	2.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	48.1	232.6	543.4	4.21	11.3	2.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	63.5	216.8	619.8	4.17	9.8	2.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	58.4	214.8	579.9	4.11	9.9	2.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	53.3	214.7	539.4	4.05	10.1	2.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	48.3	208.0	495.2	3.91	10.2	2.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	48.1	214.1	495.7	3.97	10.3	2.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	44.0	207.0	458.4	3.83	10.4	2.2	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	39.4	199.0	414.8	3.66	10.5	2.1	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	41.9	206.5	439.4	3.78	10.5	2.1	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.9	196.9	365.4	3.52	10.8	1.9	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.1	195.2	319.3	3.36	11.0	1.6	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	44.9	172.4	378.5	3.37	8.4	2.2	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.2	170.9	331.8	3.26	8.7	1.9	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.5	166.1	288.5	3.10	8.9	1.7	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.6	170.0	298.0	3.16	8.9	1.8	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.4	163.0	264.4	3.00	9.0	1.6	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.3	165.2	264.6	3.02	9.0	1.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.2	161.9	239.4	2.91	9.1	1.5	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	49.8	160.4	365.9	3.21	7.3	2.3	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	45.2	158.3	338.6	3.15	7.5	2.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	40.1	155.4	306.9	3.07	7.7	2.0	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	34.7	151.9	271.6	2.95	7.8	1.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.8	149.7	252.8	2.88	7.9	1.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.8	147.0	231.7	2.79	8.0	1.6	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	55.6	149.9	349.7	3.10	6.3	2.3	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	50.3	148.0	323.6	3.04	6.4	2.2	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	41.9	139.3	277.7	2.84	6.6	2.0	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	44.7	145.7	295.1	2.97	6.6	2.0	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	38.1	137.5	257.3	2.79	6.8	1.9	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	34.0	135.2	234.1	2.71	6.9	1.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	38.5	142.6	261.6	2.87	6.8	1.8	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.3	140.6	243.2	2.80	6.9	1.7	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.3	131.8	206.9	2.60	7.1	1.6	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.0	138.3	224.0	2.72	7.0	1.6	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
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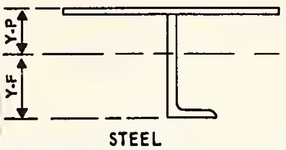
25.5# PLATE WEIGHT

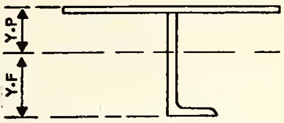
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.9	129.9	192.5	2.54	7.1	1.5	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.4	135.4	202.6	2.63	7.1	1.5	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.4	127.3	176.5	2.46	7.2	1.4	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.8	124.4	160.0	2.37	7.3	1.3	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	31.6	117.1	189.5	2.42	6.0	1.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.1	114.8	172.1	2.35	6.1	1.5	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.4	112.0	152.7	2.26	6.3	1.4	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.4	110.1	141.8	2.20	6.3	1.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.3	107.7	130.1	2.13	6.4	1.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.1	105.1	118.0	2.05	6.5	1.1	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.8	101.4	104.5	1.95	6.6	1.0	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.4	96.6	133.1	2.06	5.2	1.4	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.7	94.7	121.2	2.00	5.3	1.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.8	92.2	107.8	1.92	5.5	1.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.2	90.5	100.2	1.87	5.5	1.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.5	88.3	92.0	1.81	5.6	1.0	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.8	85.9	83.5	1.74	5.7	1.0	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	12.9	82.7	74.1	1.65	5.7	0.9	3.61	6.00	4.00	0.375	2.25



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	107.5	396.4	1,580.7	6.05	14.7	4.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	98.4	394.0	1,471.5	5.96	15.0	3.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	89.1	392.0	1,356.6	5.85	15.2	3.5	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	84.3	391.3	1,296.7	5.78	15.4	3.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	112.9	336.7	1,326.5	5.28	11.7	3.9	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	105.9	334.5	1,262.0	5.25	11.9	3.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	102.1	333.4	1,226.1	5.22	12.0	3.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	98.3	332.4	1,190.4	5.19	12.1	3.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	94.4	331.3	1,152.6	5.16	12.2	3.5	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	90.4	330.4	1,113.9	5.13	12.3	3.4	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	86.4	329.6	1,074.2	5.09	12.4	3.3	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	78.6	317.9	988.5	4.91	12.6	3.1	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	82.4	328.9	1,033.4	5.05	12.5	3.1	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	65.7	314.2	852.1	4.72	13.0	2.7	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	57.5	312.5	761.9	4.57	13.2	2.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	69.6	274.4	760.0	4.32	10.9	2.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	58.3	271.4	656.7	4.16	11.3	2.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	52.5	270.2	601.3	4.06	11.5	2.2	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	48.7	269.7	564.4	3.98	11.6	2.1	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	64.6	252.0	652.4	4.01	10.1	2.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	59.4	249.6	608.7	3.93	10.2	2.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	54.1	249.2	564.0	3.86	10.4	2.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	49.0	241.1	517.1	3.72	10.5	2.1	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	48.7	248.1	516.3	3.76	10.6	2.1	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	44.6	239.5	477.2	3.63	10.7	2.0	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	39.9	229.8	431.3	3.47	10.8	1.9	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	42.4	238.7	456.6	3.58	10.8	1.9	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.3	226.4	378.2	3.31	11.0	1.7	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.3	223.2	329.1	3.15	11.2	1.5	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	45.7	199.4	397.1	3.22	8.7	2.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.7	197.0	346.0	3.09	8.9	1.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.9	190.6	299.7	2.93	9.1	1.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.0	195.2	309.4	2.98	9.1	1.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.7	186.5	274.0	2.83	9.2	1.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.7	188.9	273.9	2.84	9.2	1.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.5	184.3	247.3	2.72	9.3	1.3	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	50.8	185.7	386.2	3.09	7.6	2.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	46.0	183.0	356.3	3.02	7.7	1.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	40.8	179.2	321.7	2.93	7.9	1.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	35.2	174.6	283.6	2.80	8.1	1.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	32.3	171.8	263.3	2.73	8.2	1.5	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.2	168.1	240.8	2.64	8.3	1.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	56.6	174.0	371.1	2.99	6.6	2.1	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	51.1	171.6	342.2	2.93	6.7	2.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	42.7	160.8	292.9	2.73	6.9	1.8	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	45.4	168.6	310.8	2.85	6.8	1.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	38.8	158.5	270.6	2.66	7.0	1.7	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	34.5	155.3	245.3	2.58	7.1	1.6	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	39.1	164.4	274.3	2.73	7.0	1.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.7	161.7	254.3	2.66	7.1	1.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.8	150.8	215.9	2.47	7.3	1.4	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.4	158.7	233.6	2.58	7.2	1.5	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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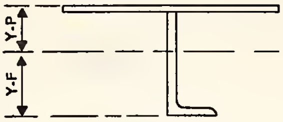
28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 9/16 x 21.9 L	21.86	27.3	148.2	200.5	2.40	7.3	1.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.8	154.7	210.7	2.48	7.3	1.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.7	144.7	183.4	2.32	7.4	1.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.1	140.8	165.8	2.23	7.5	1.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	32.1	134.3	199.2	2.31	6.2	1.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.6	131.2	180.3	2.24	6.3	1.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.8	127.4	159.4	2.14	6.4	1.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.7	124.8	147.7	2.08	6.5	1.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.6	121.6	135.3	2.00	6.6	1.1	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.4	118.0	122.3	1.92	6.7	1.0	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	16.1	113.1	108.1	1.83	6.7	1.0	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.8	110.2	140.0	1.96	5.4	1.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	23.1	107.5	127.0	1.90	5.5	1.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.1	104.1	112.6	1.81	5.6	1.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.4	101.7	104.4	1.76	5.7	1.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.7	98.8	95.7	1.70	5.7	1.0	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.0	95.6	86.7	1.63	5.8	0.9	4.18	6.00	4.00	0.437	2.62
6 x 4 x 3/8 x 12.3 L	12.27	13.1	91.3	76.7	1.55	5.8	0.8	3.61	6.00	4.00	0.375	2.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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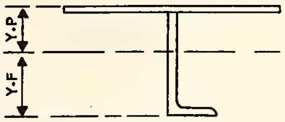
30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	109.2	455.4	1,651.1	5.83	15.1	3.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	99.8	452.6	1,532.7	5.73	15.4	3.4	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	90.2	450.2	1,408.6	5.59	15.6	3.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	85.3	449.2	1,344.2	5.52	15.8	3.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	115.1	385.8	1,395.9	5.14	12.1	3.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	107.8	383.4	1,325.3	5.09	12.3	3.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	103.8	382.2	1,285.9	5.05	12.4	3.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	99.9	381.0	1,246.9	5.02	12.5	3.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	95.9	379.9	1,205.7	4.98	12.6	3.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	91.8	378.8	1,163.6	4.94	12.7	3.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	87.6	377.8	1,120.3	4.89	12.8	3.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	79.7	364.1	1,030.3	4.71	12.9	2.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	83.5	376.9	1,076.1	4.84	12.9	2.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	66.5	359.2	883.3	4.50	13.3	2.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	58.1	356.4	786.7	4.34	13.5	2.2	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	70.6	313.7	792.8	4.15	11.2	2.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	59.0	309.5	681.2	3.97	11.5	2.2	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	53.0	307.5	621.7	3.85	11.7	2.0	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	49.1	306.3	582.3	3.77	11.8	1.9	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	65.6	287.7	680.8	3.85	10.4	2.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	60.2	284.6	633.7	3.77	10.5	2.2	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	54.8	283.7	585.3	3.68	10.7	2.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	49.7	273.9	536.1	3.54	10.8	2.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	49.2	281.7	534.0	3.57	10.9	1.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	45.1	271.4	493.3	3.44	10.9	1.8	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	40.4	259.8	445.5	3.29	11.0	1.7	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	42.8	270.1	471.4	3.39	11.0	1.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.7	254.8	389.2	3.13	11.2	1.5	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.6	249.6	337.5	2.96	11.4	1.4	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	46.3	226.2	413.3	3.08	8.9	1.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	39.2	222.4	358.4	2.94	9.1	1.6	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.2	214.1	309.4	2.77	9.3	1.4	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.3	219.4	319.2	2.82	9.3	1.5	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	30.0	208.8	282.4	2.67	9.4	1.4	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	30.0	211.3	282.1	2.68	9.4	1.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.7	205.2	254.1	2.56	9.5	1.2	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	51.6	210.9	404.1	2.97	7.8	1.9	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	46.7	207.4	371.8	2.89	8.0	1.8	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	41.3	202.6	334.7	2.79	8.1	1.7	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	35.6	196.6	294.0	2.66	8.3	1.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	32.7	192.8	272.5	2.59	8.3	1.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.5	188.1	248.8	2.49	8.4	1.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	57.5	198.3	390.0	2.89	6.8	2.0	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	51.9	195.1	358.6	2.82	6.9	1.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	43.4	182.0	306.4	2.62	7.1	1.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	46.0	191.2	324.6	2.73	7.1	1.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	39.4	178.9	282.3	2.55	7.2	1.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	35.0	174.8	255.2	2.46	7.3	1.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	39.6	185.6	285.4	2.60	7.2	1.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	36.2	182.1	264.1	2.53	7.3	1.5	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	30.2	168.8	223.9	2.34	7.4	1.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.7	178.1	242.0	2.44	7.4	1.4	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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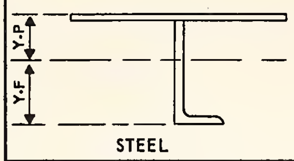
60t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	27.7	165.4	207.5	2.27	7.5	1.3	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	29.1	172.8	217.8	2.34	7.5	1.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.0	160.9	189.5	2.19	7.6	1.2	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.3	155.7	171.0	2.10	7.7	1.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	32.6	150.8	207.9	2.21	6.4	1.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	29.0	146.8	187.6	2.13	6.5	1.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	25.1	141.7	165.3	2.03	6.6	1.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.0	138.3	153.0	1.96	6.6	1.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.8	134.2	139.8	1.89	6.7	1.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.6	129.5	126.3	1.81	6.8	1.0	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	16.3	123.3	111.4	1.72	6.8	0.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	26.3	122.9	146.1	1.87	5.6	1.2	7.98	6.00	4.00	0.875	5.25
3/4 23.6 L	23.60	23.4	119.4	132.3	1.80	5.6	1.1	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.4	114.9	116.9	1.72	5.7	1.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.7	111.8	108.3	1.67	5.8	1.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.0	108.1	99.0	1.60	5.8	0.9	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.2	104.0	89.6	1.54	5.9	0.9	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	13.3	98.6	79.2	1.46	5.9	0.8	3.61	6.00	4.00	0.375	2.25



PROPERTIES OF
COMBINED BEAM AND PLATE
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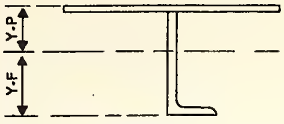
35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	111.9	580.3	1,770.4	5.40	15.8	3.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	102.0	575.9	1,635.5	5.27	16.0	2.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	92.0	571.3	1,495.2	5.11	16.3	2.6	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	86.9	569.0	1,422.8	5.03	16.4	2.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	118.6	490.6	1,516.6	4.83	12.8	3.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	110.9	487.3	1,434.4	4.76	12.9	2.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	106.7	485.5	1,388.8	4.71	13.0	2.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	102.6	483.7	1,343.8	4.67	13.1	2.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	98.3	481.9	1,296.3	4.62	13.2	2.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	94.0	480.0	1,247.9	4.57	13.3	2.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	89.6	478.1	1,198.4	4.51	13.4	2.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	81.7	459.7	1,101.1	4.34	13.5	2.4	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	85.3	476.2	1,148.0	4.45	13.5	2.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	67.8	450.3	935.4	4.10	13.8	2.1	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	59.1	443.7	827.9	3.91	14.0	1.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	72.4	394.1	848.6	3.82	11.7	2.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	60.2	385.7	722.4	3.61	12.0	1.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	54.0	380.9	656.0	3.48	12.2	1.7	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	50.0	377.5	612.3	3.39	12.3	1.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	67.2	360.2	729.4	3.54	10.9	2.0	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	61.6	355.1	676.2	3.45	11.0	1.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	55.9	352.0	621.3	3.35	11.1	1.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	50.8	338.5	568.3	3.22	11.2	1.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	50.1	347.2	564.0	3.23	11.3	1.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	46.0	333.3	520.8	3.11	11.3	1.6	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	41.2	317.4	469.7	2.97	11.4	1.5	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	43.7	330.5	496.4	3.05	11.4	1.5	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	35.3	307.5	408.0	2.80	11.5	1.3	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.1	296.8	351.9	2.63	11.7	1.2	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	47.5	278.6	441.3	2.81	9.3	1.6	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	40.1	270.7	379.6	2.66	9.5	1.4	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.9	257.5	326.2	2.49	9.6	1.3	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	35.0	264.0	336.3	2.54	9.6	1.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	30.7	249.1	296.9	2.39	9.7	1.2	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	30.5	251.6	296.2	2.40	9.7	1.2	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.2	242.0	266.2	2.29	9.8	1.1	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	53.0	261.1	435.4	2.74	8.2	1.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	48.0	255.5	398.7	2.66	8.3	1.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	42.4	247.7	357.3	2.55	8.4	1.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	36.5	237.8	312.2	2.41	8.6	1.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	33.4	231.8	288.6	2.33	8.6	1.2	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.2	224.3	262.7	2.24	8.7	1.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	59.1	246.9	423.1	2.68	7.2	1.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	53.2	241.6	387.1	2.60	7.3	1.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	44.6	223.3	330.1	2.41	7.4	1.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	47.2	235.1	348.6	2.50	7.4	1.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	40.4	218.2	302.8	2.33	7.5	1.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	35.9	211.4	272.5	2.24	7.6	1.3	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	40.5	225.9	304.7	2.37	7.5	1.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	37.0	220.2	281.1	2.29	7.6	1.3	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	30.9	201.9	238.0	2.12	7.7	1.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	33.5	213.7	256.8	2.21	7.7	1.2	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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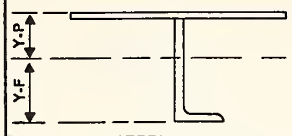
35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 9/16 x 21.9 L	21.86	28.4	196.4	219.9	2.05	7.8	1.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	29.7	205.4	230.4	2.11	7.8	1.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.6	189.4	200.4	1.97	7.8	1.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.9	181.5	180.4	1.88	7.9	1.0	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	33.6	181.8	223.3	2.02	6.6	1.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	29.8	175.4	200.7	1.93	6.7	1.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	25.8	167.2	176.0	1.83	6.8	1.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.7	161.9	162.5	1.77	6.9	1.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	21.4	155.7	148.2	1.70	6.9	1.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.1	148.6	133.6	1.63	7.0	0.9	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	27.1	146.2	157.4	1.71	5.8	1.1	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	24.2	140.6	141.9	1.64	5.9	1.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	21.0	133.5	125.0	1.55	5.9	0.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	19.3	128.9	115.5	1.50	6.0	0.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.5	123.5	105.5	1.44	6.0	0.9	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.7	117.4	95.2	1.38	6.1	0.8	4.18	6.00	4.00	0.437	2.62

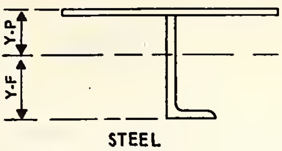


PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	114.0	708.6	1,866.3	5.00	16.4	2.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	103.8	700.8	1,717.7	4.85	16.5	2.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	93.4	692.2	1,564.0	4.68	16.7	2.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	88.2	687.5	1,485.1	4.59	16.8	2.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	121.5	599.3	1,616.5	4.52	13.3	2.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	113.5	594.2	1,524.2	4.44	13.4	2.6	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	109.1	591.2	1,473.2	4.39	13.5	2.5	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	104.8	588.3	1,422.9	4.33	13.6	2.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	100.3	585.0	1,370.0	4.28	13.7	2.3	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	95.8	581.7	1,316.4	4.22	13.7	2.3	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	91.3	578.2	1,261.7	4.16	13.8	2.2	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	83.3	554.4	1,158.4	3.99	13.9	2.1	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	86.8	574.6	1,206.1	4.09	13.9	2.1	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	68.9	537.6	977.5	3.74	14.2	1.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	60.0	524.8	861.3	3.56	14.4	1.6	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	73.9	472.5	894.4	3.52	12.1	1.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	61.3	457.3	756.2	3.30	12.3	1.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	54.9	448.0	684.2	3.17	12.5	1.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	50.7	441.3	637.0	3.08	12.6	1.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	68.7	430.2	769.7	3.26	11.2	1.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	62.9	422.0	711.4	3.17	11.3	1.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	57.0	415.4	651.2	3.06	11.4	1.6	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	51.7	397.6	595.0	2.94	11.5	1.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	51.0	406.4	588.8	2.94	11.6	1.4	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	46.9	388.6	543.6	2.83	11.6	1.4	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	42.0	367.9	490.1	2.70	11.7	1.3	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	44.4	383.6	517.4	2.77	11.7	1.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	36.0	351.7	424.1	2.53	11.8	1.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.6	334.3	364.6	2.37	11.9	1.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	48.6	326.4	465.0	2.58	9.6	1.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	40.9	312.8	397.8	2.42	9.7	1.3	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	34.6	293.7	340.8	2.26	9.8	1.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	35.7	301.3	351.0	2.30	9.8	1.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	31.3	281.9	309.8	2.17	9.9	1.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	31.1	284.1	308.7	2.17	9.9	1.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.8	270.6	277.0	2.07	10.0	1.0	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 40.8 L	40.80	54.4	308.0	462.0	2.53	8.5	1.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	49.1	299.3	421.8	2.44	8.6	1.4	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	43.3	287.8	376.7	2.33	8.7	1.3	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	37.3	273.2	328.1	2.20	8.8	1.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	34.2	264.5	302.7	2.13	8.9	1.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.9	253.8	275.1	2.04	8.9	1.1	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	60.5	292.8	451.5	2.49	7.5	1.5	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	54.5	284.7	411.6	2.40	7.6	1.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	45.8	260.9	350.7	2.22	7.7	1.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	48.2	274.7	369.3	2.30	7.7	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	41.5	253.1	320.8	2.14	7.7	1.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	36.8	243.0	287.8	2.05	7.8	1.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	41.4	261.1	321.5	2.17	7.8	1.2	8.36	8.00	6.00	0.625	5.00
8 x 6 x 9/16 x 25.7 L	25.70	37.8	252.7	296.0	2.09	7.8	1.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	31.7	229.4	250.5	1.93	7.9	1.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	34.2	243.2	269.9	2.01	7.9	1.1	6.75	8.00	6.00	0.500	4.00

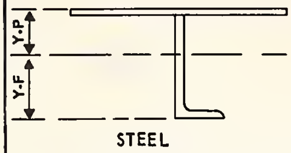


PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x IN. x LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
8 x 4 x 9/16 x 21.9 L	21.86	29.1	221.5	231.2	1.87	8.0	1.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	30.4	231.5	241.7	1.91	8.0	1.0	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	26.3	211.8	210.4	1.79	8.0	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	23.5	201.0	189.1	1.70	8.1	0.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	34.5	208.5	237.1	1.86	6.9	1.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	30.7	199.2	212.5	1.77	6.9	1.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	26.5	187.6	186.0	1.67	7.0	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	24.3	180.4	171.5	1.61	7.0	1.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	22.0	172.0	156.3	1.55	7.1	0.9	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.7	162.6	140.7	1.48	7.1	0.9	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	28.0	165.5	167.8	1.57	6.0	1.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	25.0	157.6	151.0	1.50	6.0	1.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	21.8	147.9	132.8	1.42	6.1	0.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	20.0	141.8	122.6	1.37	6.1	0.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	18.1	134.7	111.9	1.31	6.2	0.8	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	16.3	127.0	101.0	1.25	6.2	0.8	4.18	6.00	4.00	0.437	2.62

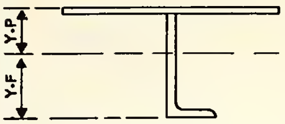


PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	115.9	834.6	1,945.9	4.63	16.8	2.3	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	105.3	821.8	1,785.8	4.48	17.0	2.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	94.7	807.1	1,621.0	4.31	17.1	2.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	89.3	798.9	1,536.8	4.22	17.2	1.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	124.0	707.6	1,701.0	4.23	13.7	2.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	115.6	699.6	1,599.9	4.14	13.8	2.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	111.1	694.9	1,544.2	4.09	13.9	2.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	106.6	690.1	1,489.5	4.03	14.0	2.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	102.0	684.9	1,432.1	3.97	14.0	2.1	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	97.4	679.4	1,373.9	3.91	14.1	2.0	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	92.8	673.5	1,314.8	3.84	14.2	2.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	84.7	643.7	1,206.9	3.69	14.3	1.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	88.1	667.2	1,254.9	3.77	14.2	1.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	70.0	616.7	1,013.3	3.44	14.5	1.6	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	60.8	596.0	889.9	3.25	14.6	1.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	75.2	545.2	933.6	3.25	12.4	1.7	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	62.3	520.9	785.4	3.03	12.6	1.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	55.7	505.9	708.8	2.90	12.7	1.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	51.5	495.1	658.8	2.81	12.8	1.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	70.0	494.4	804.4	3.02	11.5	1.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	64.0	482.3	741.9	2.92	11.6	1.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	57.9	471.1	677.2	2.82	11.7	1.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	52.7	448.7	618.6	2.70	11.7	1.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	51.8	456.7	610.8	2.70	11.8	1.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	47.7	435.1	564.0	2.59	11.8	1.3	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	42.8	409.7	508.5	2.47	11.9	1.2	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	45.2	427.5	536.3	2.54	11.9	1.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	36.6	386.5	439.0	2.31	12.0	1.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.2	362.0	376.6	2.16	12.1	1.0	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	49.6	367.7	486.3	2.38	9.8	1.3	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	41.7	347.4	414.5	2.23	9.9	1.2	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	35.4	322.2	354.5	2.07	10.0	1.1	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	36.4	330.6	364.8	2.11	10.0	1.1	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	32.0	306.9	322.0	1.98	10.1	1.0	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	31.8	308.7	320.6	1.98	10.1	1.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	28.4	291.4	287.5	1.89	10.1	1.0	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	55.6	349.6	485.9	2.35	8.7	1.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	50.2	337.4	442.6	2.26	8.8	1.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	44.3	321.5	394.4	2.15	8.9	1.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	38.1	301.9	342.8	2.02	9.0	1.1	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	35.0	290.4	316.1	1.95	9.0	1.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	31.6	276.5	287.0	1.87	9.1	1.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	61.9	334.2	476.8	2.32	7.7	1.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	55.7	322.6	433.7	2.23	7.8	1.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	47.0	293.3	369.6	2.06	7.9	1.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	49.3	308.7	388.1	2.13	7.9	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	42.5	282.5	337.4	1.98	7.9	1.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	37.8	268.9	302.2	1.89	8.0	1.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	42.3	290.2	337.1	2.00	8.0	1.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	38.7	278.9	310.0	1.93	8.0	1.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	32.5	251.0	262.6	1.78	8.1	1.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	35.0	266.5	282.4	1.85	8.1	1.1	6.75	8.00	6.00	0.500	4.00



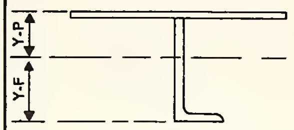
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

45.9# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	29.8	240.8	242.2	1.71	8.1	1.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	31.1	251.4	252.7	1.76	8.1	1.0	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	27.0	228.6	220.3	1.64	8.2	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	24.1	215.1	198.0	1.56	8.2	0.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	35.6	230.4	250.3	1.72	7.0	1.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	31.6	218.2	224.1	1.64	7.1	1.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	27.3	203.2	195.9	1.54	7.2	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	25.1	194.2	180.6	1.49	7.2	0.9	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	22.8	183.9	164.6	1.42	7.2	0.9	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	20.4	172.5	148.2	1.36	7.3	0.9	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	29.0	181.0	178.2	1.46	6.1	1.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	25.9	170.9	160.3	1.39	6.2	0.9	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	22.6	158.8	140.9	1.31	6.2	0.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	20.8	151.4	130.2	1.27	6.3	0.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	18.9	142.9	118.9	1.21	6.3	0.8	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	17.0	133.9	107.4	1.16	6.3	0.8	4.18	6.00	4.00	0.437	2.62

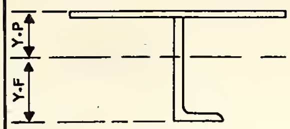


PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	117.5	953.6	2,014.1	4.31	17.1	2.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	106.8	934.0	1,844.3	4.16	17.3	2.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	95.9	911.5	1,670.3	3.99	17.4	1.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	90.4	898.9	1,581.7	3.90	17.5	1.8	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	126.2	811.5	1,774.3	3.96	14.1	2.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	117.6	799.6	1,665.7	3.87	14.2	2.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	112.9	792.6	1,605.9	3.82	14.2	2.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	108.4	785.4	1,547.4	3.76	14.3	2.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	103.6	777.5	1,486.1	3.70	14.3	1.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	98.9	769.2	1,424.1	3.64	14.4	1.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	94.1	760.2	1,361.3	3.57	14.5	1.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	86.0	724.3	1,249.5	3.43	14.5	1.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	89.4	750.7	1,297.8	3.50	14.5	1.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	71.0	685.1	1,045.2	3.18	14.7	1.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	61.7	655.1	915.9	3.00	14.9	1.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	76.5	609.5	968.7	3.02	12.7	1.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	63.3	574.6	812.0	2.80	12.8	1.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	56.6	553.3	731.4	2.68	12.9	1.3	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	52.3	538.0	679.0	2.59	13.0	1.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	71.2	550.6	835.9	2.81	11.7	1.5	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	65.2	534.0	769.7	2.71	11.8	1.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	59.0	517.6	701.2	2.61	11.9	1.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	53.6	490.8	640.6	2.50	11.9	1.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	52.7	497.4	631.3	2.49	12.0	1.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	48.5	472.2	583.2	2.40	12.0	1.2	7.86	12.00	3.50	0.600	6.00
12 x 3 30.0 C	25.34	43.6	442.4	526.0	2.28	12.1	1.2	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	46.0	462.1	554.2	2.34	12.1	1.2	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	37.3	412.4	453.5	2.13	12.2	1.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.8	381.3	388.7	1.99	12.2	1.0	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	42.6	374.5	430.6	2.06	10.1	1.1	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	36.4	334.9	369.6	1.91	10.1	1.1	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	37.2	352.6	378.6	1.94	10.2	1.1	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	31.1	309.1	317.8	1.78	10.2	1.0	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	32.5	326.4	332.8	1.83	10.2	1.0	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	29.0	305.8	298.4	1.74	10.3	1.0	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	25.7	278.7	264.9	1.64	10.3	1.0	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	45.4	348.9	411.6	2.00	9.1	1.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	39.1	324.3	357.4	1.88	9.1	1.1	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	35.9	310.1	329.4	1.81	9.2	1.1	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	32.4	293.3	299.1	1.73	9.2	1.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	63.4	370.1	500.6	2.17	7.9	1.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	57.0	354.8	454.5	2.08	8.0	1.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	48.2	320.4	387.8	1.92	8.0	1.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	50.5	336.7	406.2	1.98	8.0	1.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	43.7	306.5	353.6	1.85	8.1	1.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	38.8	289.4	316.5	1.76	8.2	1.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	43.4	313.3	352.4	1.86	8.1	1.1	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	39.7	299.4	324.0	1.79	8.2	1.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	33.4	267.5	275.0	1.65	8.2	1.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	35.9	284.1	295.0	1.71	8.2	1.0	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	30.7	255.2	253.6	1.59	8.3	1.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	32.0	266.1	264.1	1.63	8.3	1.0	5.93	8.00	6.00	0.437	3.50



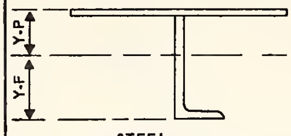
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 1/2 x 19.6 L	19.55	27.8	240.8	230.8	1.52	8.3	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	24.9	225.1	207.5	1.45	8.3	0.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	36.7	247.9	263.6	1.60	7.2	1.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	32.6	233.0	235.9	1.53	7.2	1.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	28.3	215.1	206.3	1.43	7.3	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	26.0	204.5	190.3	1.38	7.3	0.9	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	23.6	192.7	173.6	1.32	7.3	0.9	5.25	7.00	4.00	0.500	3.50



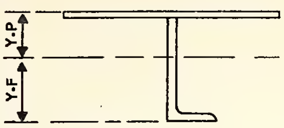
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

60t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	119.1	1,061.8	2,074.4	4.02	17.4	2.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	108.1	1,034.2	1,896.3	3.87	17.5	1.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	97.1	1,002.5	1,714.5	3.71	17.7	1.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	91.5	984.8	1,622.2	3.62	17.7	1.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	128.2	907.9	1,839.7	3.73	14.3	2.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	119.4	891.1	1,724.5	3.63	14.4	1.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	114.6	881.4	1,661.3	3.58	14.5	1.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	110.0	871.3	1,599.4	3.52	14.5	1.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	105.2	860.3	1,534.8	3.46	14.6	1.8	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	100.4	848.7	1,469.5	3.40	14.6	1.7	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	95.5	836.2	1,403.5	3.33	14.7	1.7	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	87.3	794.1	1,288.4	3.20	14.8	1.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	90.6	822.9	1,336.9	3.26	14.8	1.6	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	72.0	741.6	1,075.0	2.95	14.9	1.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	62.6	702.1	940.6	2.78	15.0	1.3	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	77.8	664.4	1,001.3	2.82	12.9	1.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	64.3	618.2	837.4	2.61	13.0	1.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	57.5	590.5	753.4	2.49	13.1	1.3	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	53.2	570.8	699.0	2.41	13.2	1.2	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	72.6	598.1	865.5	2.62	11.9	1.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	66.4	576.8	796.2	2.53	12.0	1.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	60.0	554.9	724.4	2.43	12.1	1.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	54.7	524.1	662.0	2.33	12.1	1.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	53.7	528.9	651.5	2.32	12.1	1.2	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	49.5	500.8	602.3	2.23	12.2	1.2	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	44.5	467.2	543.6	2.12	12.2	1.2	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	46.9	488.1	572.1	2.18	12.2	1.2	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	38.1	430.9	468.5	1.98	12.3	1.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	32.5	394.1	401.6	1.84	12.4	1.0	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	43.6	395.2	447.1	1.92	10.2	1.1	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	37.4	352.2	384.7	1.78	10.3	1.1	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	38.1	368.6	392.9	1.81	10.3	1.1	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	32.0	322.0	330.9	1.66	10.3	1.0	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	33.4	339.0	345.7	1.70	10.4	1.0	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	29.9	315.8	310.3	1.62	10.4	1.0	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	26.5	287.2	276.2	1.53	10.4	1.0	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	46.5	370.4	429.0	1.87	9.2	1.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	40.1	341.3	372.5	1.75	9.3	1.1	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	36.9	324.9	343.4	1.69	9.3	1.1	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	33.4	305.7	312.0	1.61	9.4	1.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	64.9	400.3	523.8	2.04	8.1	1.3	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	58.5	381.3	475.2	1.95	8.1	1.2	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	49.6	342.5	406.1	1.81	8.2	1.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	51.8	359.3	424.4	1.85	8.2	1.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	44.9	325.6	370.2	1.73	8.2	1.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	40.0	305.4	331.4	1.65	8.3	1.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	44.5	331.4	368.1	1.74	8.3	1.1	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	40.8	315.1	338.5	1.67	8.3	1.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	34.5	280.1	288.1	1.55	8.3	1.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	37.0	297.5	308.4	1.60	8.3	1.0	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	31.7	266.1	265.9	1.49	8.4	1.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	33.0	277.0	276.3	1.52	8.4	1.0	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	28.8	250.0	242.2	1.43	8.4	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	25.9	232.7	218.2	1.36	8.4	0.9	5.06	8.00	4.00	0.437	3.50



PROPERTIES OF
COMBINED BEAM AND PLATE
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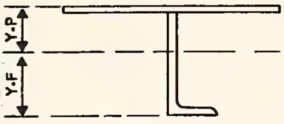
56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	38.0	262.0	277.7	1.51	7.3	1.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	33.8	244.7	248.7	1.43	7.4	1.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	29.4	224.5	217.8	1.35	7.4	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	27.1	212.7	201.1	1.30	7.4	0.9	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	24.7	199.6	183.8	1.24	7.5	0.9	5.25	7.00	4.00	0.500	3.50

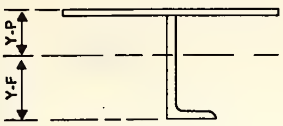


PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

60t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	120.6	1,157.7	2,129.8	3.77	17.7	1.8	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	109.5	1,121.2	1,944.6	3.62	17.8	1.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	98.2	1,079.6	1,756.0	3.46	17.9	1.6	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	92.6	1,056.4	1,660.4	3.38	17.9	1.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	130.2	995.2	1,899.9	3.51	14.6	1.9	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	121.2	973.1	1.778.9	3.42	14.7	1.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	116.4	960.2	1,712.6	3.36	14.7	1.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	111.6	947.0	1,647.9	3.31	14.8	1.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	106.7	932.6	1,580.3	3.25	14.8	1.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	101.8	917.3	1,512.2	3.19	14.9	1.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	96.9	901.1	1,443.4	3.12	14.9	1.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	88.7	853.2	1,325.5	3.00	14.9	1.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	91.9	883.8	1,374.0	3.06	14.9	1.6	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	73.1	787.2	1,104.1	2.76	15.1	1.4	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	79.2	710.1	1,033.0	2.65	13.0	1.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	65.5	652.7	862.6	2.44	13.2	1.3	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	73.9	637.5	894.5	2.46	12.1	1.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	67.7	611.5	822.5	2.37	12.2	1.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	61.2	584.3	747.8	2.28	12.2	1.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	55.8	550.1	683.8	2.18	12.3	1.2	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	53.2	450.9	546.9	1.94	10.3	1.2	9.91	10 00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	59.8	438.7	552.8	1.94	9.2	1.3	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	54.1	415.6	502.5	1.86	9.3	1.2	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	47.9	387.6	447.3	1.76	9.3	1.2	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	66.6	425.7	547.4	1.92	8.2	1.3	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	60.0	403.3	496.5	1.84	8.3	1.2	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	51.1	360.7	425.4	1.71	8.3	1.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	53.3	377.6	443.5	1.75	8.3	1.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	46.4	341.3	387.9	1.64	8.4	1.1	9.73	8.00	4.00	0.875	7.00



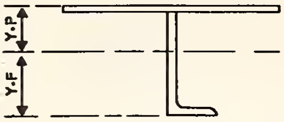
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
C-L AND L

60t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	123.8	1,308.8	2,233.1	3.35	18.0	1.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	112.3	1,254.0	2,036.0	3.22	18.1	1.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	100.8	1,192.6	1,836.1	3.07	18.2	1.5	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	95.1	1,159.1	1,735.1	2.99	18.3	1.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	134.3	1,138.6	2,012.0	3.15	15.0	1.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	125.0	1,105.0	1,881.2	3.06	15.0	1.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	120.0	1,085.6	1,809.8	3.01	15.1	1.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	115.1	1,065.8	1,740.2	2.95	15.1	1.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	110.1	1,044.4	1,667.7	2.90	15.2	1.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	105.0	1,021.9	1,594.8	2.84	15.2	1.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	99.9	998.2	1,521.3	2.78	15.2	1.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	91.6	940.7	1,398.7	2.67	15.3	1.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	94.8	973.2	1,447.3	2.72	15.3	1.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	75.7	849.8	1,163.8	2.45	15.4	1.4	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	82.3	777.0	1,097.3	2.37	13.3	1.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	68.1	700.0	915.9	2.18	13.4	1.3	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	77.1	695.0	954.5	2.21	12.4	1.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	70.7	661.0	877.7	2.12	12.4	1.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	64.0	624.8	797.9	2.03	12.5	1.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	58.5	585.4	731.3	1.95	12.5	1.2	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	56.3	482.5	592.4	1.75	10.5	1.2	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	63.4	475.4	601.7	1.75	9.5	1.3	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	57.5	446.9	547.8	1.68	9.5	1.2	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	51.1	413.3	488.8	1.59	9.6	1.2	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	70.7	465.1	598.2	1.74	8.5	1.3	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	63.9	437.0	543.3	1.67	8.5	1.2	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	54.8	389.3	468.7	1.55	8.5	1.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	56.9	405.6	486.4	1.58	8.6	1.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	49.9	366.0	428.4	1.49	8.6	1.2	9.73	8.00	4.00	0.875	7.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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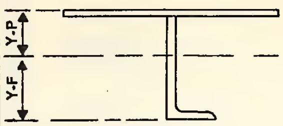
81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	127.3	1,411.2	2,335.5	3.03	18.3	1.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	115.6	1,339.9	2,128.7	2.90	18.4	1.6	13.01	18.00	4.10	0.625	10.80
15 x 4 x 75.0 C	64.99	138.8	1,242.7	2,122.3	2.86	15.3	1.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	129.3	1,198.2	1,983.5	2.78	15.3	1.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	124.1	1,172.8	1,907.8	2.73	15.4	1.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	119.1	1,147.1	1,834.2	2.68	15.4	1.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	113.9	1,119.6	1,757.6	2.63	15.4	1.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	108.7	1,090.9	1,680.7	2.57	15.5	1.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	103.5	1,060.8	1,603.3	2.52	15.5	1.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	95.2	996.5	1,476.9	2.42	15.5	1.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	98.3	1,029.6	1,525.5	2.46	15.5	1.5	12.16	15.00	4.00	0.797	9.37
13 x 4 x 50.0 C	41.96	86.1	820.6	1,168.3	2.15	13.6	1.4	12.34	13.00	4.41	0.610	10.23
12 x 4 x 50.0 C	41.60	81.1	733.3	1,021.8	2.01	12.6	1.4	12.24	12.00	4.13	0.700	10.02
9 x 4 x 1 x 40.8 L	40.80	68.1	503.9	659.9	1.62	9.7	1.3	12.00	9.00	4.00	1.000	9.00
8 x 6 x 1 x 44.2 L	44.20	75.9	496.2	658.1	1.61	8.7	1.3	13.00	8.00	6.00	1.000	8.00



PROPERTIES OF COMBINED BEAM AND PLATE
E-L AND L

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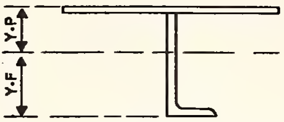
7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
9 x 4 x 1 x 40.8 L	40.80	29.2	34.4	145.2	3.25	4.2	5.0	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	27.4	31.7	135.0	3.30	4.3	4.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	25.5	28.7	123.9	3.36	4.3	4.9	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	23.6	25.3	112.1	3.44	4.4	4.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	22.6	23.6	105.9	3.48	4.5	4.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	21.6	21.7	99.2	3.52	4.6	4.6	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	26.0	38.4	126.9	2.93	3.3	4.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	24.4	35.4	118.3	2.99	3.3	4.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	24.4	28.9	108.3	2.91	3.7	4.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	22.8	32.2	109.3	3.06	3.4	4.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	23.0	26.8	101.3	2.97	3.8	4.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	21.5	24.4	93.5	3.03	3.8	4.3	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	21.2	28.5	99.4	3.13	3.5	4.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	20.3	26.4	94.1	3.18	3.6	4.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	20.0	21.5	84.9	3.09	3.9	4.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	19.5	24.4	88.6	3.22	3.6	4.6	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	19.2	20.1	80.5	3.13	4.0	4.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	18.6	22.0	82.5	3.27	3.7	4.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	18.4	18.5	75.5	3.17	4.1	4.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	16.8	17.6	70.4	3.21	4.2	4.0	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	18.9	22.2	73.3	2.63	3.3	3.9	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	17.8	20.2	68.0	2.68	3.4	3.8	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	16.6	18.0	62.2	2.75	3.5	3.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	16.1	16.8	59.0	2.78	3.5	3.7	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	15.5	15.5	55.6	2.81	3.6	3.6	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	14.1	14.9	52.0	2.85	3.7	3.5	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	12.5	14.2	47.9	2.89	3.8	3.4	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	15.1	17.8	50.5	2.28	2.8	3.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	14.3	16.3	47.2	2.33	2.9	3.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	13.5	14.6	43.5	2.39	3.0	3.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	13.1	13.7	41.4	2.42	3.0	3.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	12.6	12.7	39.1	2.45	3.1	3.1	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	11.5	12.4	37.0	2.43	3.2	3.0	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	11.5	12.2	36.7	2.49	3.2	3.0	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.3	11.8	34.0	2.51	3.3	2.9	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.4	11.6	32.0	2.49	3.4	2.8	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	8.9	11.3	30.8	2.54	3.5	2.7	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.2	11.1	29.1	2.51	3.6	2.6	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	6.8	10.6	25.8	2.51	3.8	2.4	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	10.9	11.5	29.0	1.96	2.5	2.7	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	10.4	10.4	27.0	2.01	2.6	2.6	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.0	9.9	24.4	2.06	2.7	2.5	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.1	9.7	22.9	2.04	2.8	2.4	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	9.6	9.7	25.0	2.16	2.6	2.6	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.3	9.6	23.0	2.09	2.8	2.4	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.4	9.4	21.4	2.06	2.9	2.3	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.4	9.3	21.4	2.11	2.9	2.3	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.7	9.1	20.0	2.08	3.0	2.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.4	9.0	19.4	2.12	3.0	2.2	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	5.8	8.8	18.2	2.09	3.1	2.1	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.4	8.7	17.3	2.13	3.2	2.0	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	4.9	8.5	16.0	2.08	3.3	1.9	1.94	5.00	3.00	0.250	1.25

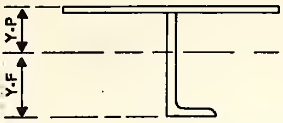


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7 L	14.62	7.7	7.8	16.2	1.64	2.1	2.1	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	6.8	7.6	15.1	1.62	2.2	2.0	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	6.7	7.5	14.8	1.68	2.2	2.0	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.0	7.3	13.8	1.66	2.3	1.9	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.2	7.3	14.0	1.70	2.3	1.9	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.5	7.1	13.0	1.68	2.4	1.8	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.5	7.1	13.0	1.71	2.4	1.8	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.0	7.0	12.2	1.69	2.5	1.7	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.3	7.0	12.7	1.75	2.4	1.8	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	4.9	7.0	12.0	1.73	2.5	1.7	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.3	6.8	11.1	1.70	2.6	1.6	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.1	6.7	10.6	1.72	2.6	1.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.6	6.6	9.8	1.69	2.7	1.5	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.0	6.2	10.3	1.47	2.0	1.6	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.4	6.0	9.4	1.44	2.1	1.6	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.6	6.1	9.7	1.48	2.1	1.6	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.0	5.9	8.9	1.45	2.2	1.5	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.2	5.9	9.0	1.49	2.2	1.5	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.7	5.8	8.3	1.46	2.3	1.4	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.6	5.8	8.2	1.49	2.3	1.4	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.2	5.7	7.5	1.46	2.4	1.3	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.0	5.7	7.3	1.48	2.4	1.3	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.7	5.5	6.7	1.45	2.5	1.2	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.1	5.1	7.2	1.27	1.8	1.4	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.6	5.0	6.6	1.25	1.9	1.3	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.8	5.1	6.9	1.28	1.8	1.4	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.0	4.8	5.9	1.21	2.0	1.2	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.3	5.0	6.3	1.26	1.9	1.3	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.4	5.0	6.5	1.29	1.9	1.3	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.0	4.9	5.9	1.26	2.0	1.2	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.0	4.9	5.9	1.29	2.0	1.2	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.6	4.7	5.4	1.26	2.1	1.1	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.2	4.6	4.8	1.21	2.2	1.0	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.5	4.7	5.2	1.28	2.1	1.1	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.2	4.7	4.8	1.25	2.2	1.0	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	4.5	4.3	1.20	2.2	0.9	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	4.6	4.4	1.25	2.2	1.0	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	4.4	3.5	1.15	2.4	0.8	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.0	3.8	3.5	1.03	1.8	0.9	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.7	3.7	3.2	1.02	1.8	0.9	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	3.6	2.8	1.00	1.9	0.8	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	3.6	2.4	0.96	2.0	0.7	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.4	2.9	2.1	0.82	1.5	0.7	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	2.9	2.0	0.82	1.5	0.7	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	2.8	1.7	0.80	1.6	0.6	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	2.7	1.5	0.75	1.6	0.5	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	2.7	1.5	0.77	1.7	0.5	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	2.6	1.2	0.72	1.7	0.5	0.62	2.00	1.50	0.187	0.37



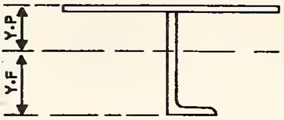
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE E-L AND L

50t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 4 x 1 x 40.8 L	40.80	33.4	36.1	159.8	3.33	4.4	4.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	31.6	33.3	149.4	3.39	4.5	4.7	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	29.8	30.0	137.8	3.45	4.6	4.6	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	26.6	27.9	125.4	3.52	4.7	4.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	24.7	26.9	118.7	3.55	4.8	4.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	22.7	25.9	111.4	3.59	4.9	4.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	29.9	40.3	141.1	3.03	3.5	4.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	28.4	37.2	132.2	3.09	3.6	4.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	28.1	30.3	120.0	2.99	4.0	4.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	26.8	33.8	122.8	3.16	3.6	4.6	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	26.8	28.1	112.7	3.05	4.0	4.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	25.3	25.6	104.6	3.11	4.1	4.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	25.2	29.8	112.3	3.23	3.8	4.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	24.4	27.7	106.5	3.27	3.8	4.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	22.6	23.8	95.3	3.17	4.2	4.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	23.5	25.5	100.5	3.32	3.9	4.3	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	21.1	23.1	90.5	3.20	4.3	3.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	22.7	23.0	93.9	3.36	4.1	4.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	19.3	22.3	85.1	3.23	4.4	3.8	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	17.5	21.5	79.4	3.26	4.5	3.7	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	22.2	23.3	82.1	2.70	3.5	3.7	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	21.1	21.2	76.4	2.75	3.6	3.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	18.9	20.0	70.2	2.81	3.7	3.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	17.6	19.5	66.7	2.84	3.8	3.4	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	16.2	18.9	62.9	2.87	3.9	3.3	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	14.7	18.3	58.8	2.90	4.0	3.2	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.1	17.7	54.2	2.92	4.2	3.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	17.9	18.8	57.0	2.34	3.0	3.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	17.2	17.2	53.4	2.39	3.1	3.1	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	15.4	16.4	49.4	2.45	3.2	3.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	14.3	16.0	47.0	2.47	3.3	2.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	13.2	15.6	44.4	2.49	3.4	2.8	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.1	15.3	42.0	2.47	3.5	2.7	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.0	15.2	41.7	2.52	3.5	2.7	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.7	14.7	38.5	2.53	3.6	2.6	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.8	14.5	36.2	2.50	3.7	2.5	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.3	14.2	34.9	2.54	3.8	2.4	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.5	14.0	32.9	2.50	3.9	2.3	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.1	13.5	28.9	2.48	4.1	2.1	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	12.1	13.3	33.1	2.01	2.7	2.5	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	10.9	12.8	30.7	2.05	2.8	2.4	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.4	12.3	27.8	2.09	3.0	2.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.5	12.0	26.0	2.06	3.1	2.2	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.0	12.2	28.6	2.18	2.9	2.3	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.6	12.0	26.2	2.10	3.0	2.2	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.7	11.7	24.3	2.06	3.1	2.1	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.7	11.7	24.2	2.11	3.1	2.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.9	11.5	22.6	2.07	3.3	2.0	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.7	11.4	21.9	2.10	3.3	1.9	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.0	11.2	20.4	2.06	3.4	1.8	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.6	11.1	19.4	2.08	3.5	1.8	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.0	10.8	17.9	2.03	3.6	1.7	1.94	5.00	3.00	0.250	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE E-L AND L

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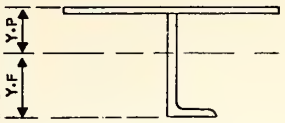
8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.1	9.7	18.6	1.67	2.3	1.9	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.2	9.5	17.2	1.64	2.4	1.8	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.0	9.4	16.9	1.70	2.4	1.8	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.3	9.2	15.8	1.67	2.5	1.7	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.4	9.2	16.0	1.71	2.5	1.7	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.7	9.0	14.8	1.68	2.6	1.6	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.7	9.1	14.8	1.71	2.6	1.6	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.2	8.9	13.8	1.68	2.7	1.5	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.5	9.0	14.4	1.73	2.6	1.6	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.0	8.9	13.6	1.71	2.7	1.5	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.5	8.7	12.5	1.67	2.8	1.4	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.2	8.6	11.9	1.68	2.8	1.4	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.8	8.5	11.0	1.64	2.9	1.3	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.2	7.9	11.7	1.47	2.2	1.5	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.6	7.6	10.6	1.44	2.3	1.4	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.8	7.7	11.0	1.48	2.3	1.4	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.2	7.5	10.0	1.44	2.4	1.3	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.3	7.6	10.2	1.48	2.4	1.3	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.8	7.4	9.3	1.44	2.5	1.3	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.7	7.4	9.3	1.46	2.5	1.2	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.3	7.3	8.4	1.42	2.6	1.2	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.1	7.3	8.1	1.44	2.6	1.1	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.8	7.1	7.4	1.39	2.7	1.0	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.3	6.5	8.3	1.27	1.9	1.3	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.7	6.4	7.6	1.24	2.0	1.2	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.9	6.4	7.8	1.28	2.0	1.2	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.1	6.1	6.7	1.20	2.1	1.1	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.4	6.3	7.1	1.24	2.1	1.1	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.5	6.4	7.3	1.28	2.1	1.1	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.1	6.2	6.6	1.24	2.2	1.1	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.1	6.2	6.6	1.26	2.2	1.1	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.7	6.1	6.0	1.22	2.2	1.0	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.3	5.8	5.3	1.17	2.3	0.9	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.6	6.1	5.8	1.23	2.3	1.0	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	6.0	5.3	1.20	2.3	0.9	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	5.8	4.7	1.14	2.4	0.8	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	5.9	4.9	1.19	2.4	0.8	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	5.5	3.8	1.08	2.5	0.7	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.0	4.8	3.9	0.99	1.9	0.8	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	4.7	3.5	0.98	2.0	0.7	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	4.6	3.1	0.95	2.1	0.7	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	4.5	2.6	0.90	2.1	0.6	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	3.7	2.4	0.79	1.6	0.6	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	3.7	2.2	0.78	1.6	0.6	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	3.6	1.9	0.76	1.7	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	3.4	1.6	0.71	1.7	0.5	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	3.4	1.6	0.71	1.8	0.5	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	3.2	1.3	0.66	1.8	0.4	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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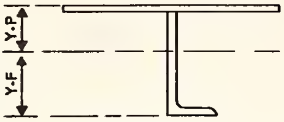
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	79.7	86.7	757.6	6.51	9.5	8.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	74.2	82.4	712.6	6.65	9.6	8.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	68.7	78.1	667.3	6.81	9.7	8.5	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	65.9	76.0	644.5	6.90	9.8	8.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	80.8	81.0	616.8	5.27	7.6	7.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	76.7	77.7	588.8	5.35	7.7	7.6	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	74.5	76.0	573.5	5.40	7.7	7.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	72.3	74.3	558.7	5.45	7.7	7.5	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	70.0	72.5	543.3	5.50	7.8	7.5	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	67.8	70.8	527.9	5.56	7.8	7.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	65.4	69.1	512.5	5.63	7.8	7.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	58.6	66.4	474.8	5.49	8.1	7.1	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	63.1	67.4	497.0	5.70	7.9	7.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	51.0	61.0	423.6	5.72	8.3	6.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	46.2	57.8	391.5	5.90	8.5	6.8	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	51.9	56.5	358.5	4.81	6.9	6.3	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	45.4	51.9	320.8	5.03	7.1	6.2	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	42.0	49.7	301.7	5.18	7.2	6.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	39.8	48.3	289.3	5.29	7.3	6.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	48.2	52.0	306.4	4.47	6.4	5.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	45.0	49.7	289.3	4.54	6.4	5.8	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	42.2	48.0	275.2	4.67	6.5	5.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	38.0	46.3	255.7	4.59	6.7	5.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	39.1	46.1	259.2	4.81	6.6	5.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	35.4	44.7	242.0	4.69	6.8	5.4	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	34.1	43.9	235.0	4.75	6.9	5.3	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	34.5	39.2	187.9	3.80	5.5	4.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	30.6	36.8	171.3	3.96	5.6	4.7	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	26.5	35.1	154.9	4.00	5.8	4.4	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	27.9	35.2	159.5	4.10	5.7	4.5	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	24.3	34.0	145.1	4.02	6.0	4.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	24.6	34.2	146.6	4.10	6.0	4.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.3	33.0	136.3	4.12	6.1	4.1	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	37.6	38.2	175.5	3.41	4.7	4.6	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	34.7	36.5	164.6	3.46	4.7	4.5	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	31.3	34.7	152.3	3.52	4.9	4.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	27.7	32.8	138.9	3.58	5.0	4.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	25.7	31.9	131.7	3.61	5.1	4.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	23.6	30.9	123.7	3.63	5.2	4.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	34.4	42.1	156.3	3.11	3.7	4.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	33.0	38.8	147.0	3.17	3.8	4.5	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	31.7	32.4	132.3	3.06	4.2	4.1	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	31.4	35.2	137.0	3.24	3.9	4.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	29.4	31.1	124.6	3.11	4.2	4.0	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	26.7	29.7	116.0	3.17	4.3	3.9	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	29.9	31.0	125.6	3.31	4.0	4.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	28.8	29.1	119.3	3.34	4.1	4.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	23.5	28.3	106.0	3.22	4.5	3.7	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	26.4	28.2	112.6	3.38	4.3	4.0	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	21.9	27.5	100.7	3.25	4.6	3.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	23.8	27.4	105.1	3.41	4.4	3.8	5.93	8.00	6.00	0.437	3.50



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
Ɛ-L AND L

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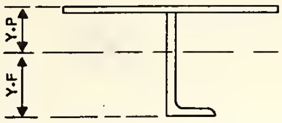
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 1/2 x 19.6 L	19.55	20.1	26.8	94.6	3.27	4.7	3.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.2	26.0	88.3	3.28	4.9	3.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	24.4	26.0	91.3	2.76	3.7	3.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	22.2	25.0	85.1	2.81	3.8	3.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	19.7	23.9	78.3	2.86	4.0	3.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.3	23.4	74.4	2.88	4.1	3.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	16.8	22.8	70.1	2.89	4.2	3.1	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.2	22.2	65.5	2.91	4.3	2.9	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.5	21.6	60.2	2.91	4.5	2.8	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	19.6	21.2	63.7	2.40	3.2	3.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	17.9	20.5	59.8	2.44	3.3	2.9	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.0	19.8	55.3	2.48	3.5	2.8	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	14.9	19.4	52.6	2.50	3.5	2.7	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	13.7	19.0	49.6	2.51	3.6	2.6	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.5	18.6	46.8	2.48	3.7	2.5	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.4	18.6	46.5	2.52	3.7	2.5	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	11.0	18.1	42.9	2.52	3.9	2.4	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.1	17.8	40.2	2.48	4.0	2.3	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.5	17.6	38.6	2.50	4.1	2.2	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.7	17.3	36.2	2.46	4.2	2.1	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.2	16.8	31.6	2.41	4.4	1.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	12.6	16.0	37.1	2.04	2.9	2.3	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.4	15.5	34.4	2.07	3.0	2.2	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.8	15.0	31.1	2.09	3.2	2.1	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.8	14.7	28.9	2.05	3.3	2.0	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.3	15.1	32.1	2.18	3.1	2.1	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.9	14.7	29.2	2.09	3.3	2.0	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.0	14.4	26.9	2.05	3.4	1.9	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.9	14.4	26.9	2.09	3.4	1.9	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.1	14.2	24.9	2.04	3.5	1.8	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.8	14.1	24.2	2.06	3.5	1.7	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.2	13.8	22.4	2.01	3.6	1.6	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.7	13.8	21.2	2.02	3.7	1.5	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.1	13.4	19.5	1.96	3.8	1.5	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.4	11.9	21.0	1.68	2.5	1.8	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.5	11.6	19.3	1.65	2.6	1.7	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.3	11.5	19.0	1.69	2.6	1.6	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.5	11.3	17.6	1.66	2.7	1.5	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.6	11.4	17.8	1.69	2.7	1.6	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.9	11.1	16.5	1.66	2.8	1.5	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.9	11.2	16.5	1.68	2.8	1.5	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.3	11.0	15.2	1.65	2.9	1.4	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.2	11.0	15.0	1.67	2.9	1.4	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.6	10.8	13.7	1.62	3.0	1.3	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.3	10.7	13.0	1.62	3.0	1.2	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.8	10.5	11.9	1.58	3.1	1.1	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.4	9.7	13.0	1.46	2.4	1.3	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.7	9.4	11.8	1.42	2.5	1.3	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.0	9.5	12.3	1.46	2.5	1.3	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.3	9.3	11.1	1.41	2.6	1.2	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.4	9.4	11.3	1.44	2.5	1.2	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.9	9.2	10.3	1.40	2.6	1.1	2.11	3.50	2.50	0.375	1.31



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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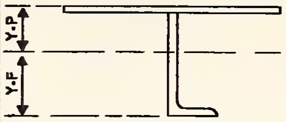
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.8	9.2	10.2	1.42	2.6	1.1	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.4	9.0	9.2	1.37	2.7	1.0	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.2	9.0	8.9	1.38	2.8	1.0	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.8	8.8	8.1	1.33	2.8	0.9	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.4	8.0	9.3	1.26	2.1	1.2	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.8	7.8	8.4	1.22	2.2	1.1	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.0	8.0	8.7	1.25	2.2	1.1	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.3	7.5	7.4	1.17	2.3	1.0	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.5	7.8	7.9	1.21	2.2	1.0	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.6	7.9	8.1	1.24	2.2	1.0	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.2	7.7	7.3	1.20	2.3	0.9	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.2	7.7	7.3	1.22	2.3	0.9	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.8	7.5	6.6	1.18	2.4	0.9	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.3	7.2	5.7	1.12	2.5	0.8	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.6	7.5	6.4	1.18	2.4	0.8	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	7.4	5.7	1.14	2.5	0.8	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	7.1	5.0	1.08	2.5	0.7	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	7.3	5.3	1.12	2.5	0.7	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.6	6.8	4.1	1.01	2.6	0.6	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.1	5.9	4.3	0.96	2.0	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	5.8	3.8	0.93	2.1	0.7	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	5.6	3.3	0.89	2.2	0.6	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	5.4	2.8	0.84	2.2	0.5	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	4.5	2.6	0.76	1.7	0.6	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	4.4	2.4	0.74	1.7	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	4.3	2.1	0.71	1.8	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	4.0	1.7	0.66	1.8	0.4	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	4.1	1.7	0.66	1.8	0.4	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	3.8	1.4	0.61	1.9	0.4	0.62	2.00	1.50	0.187	0.37



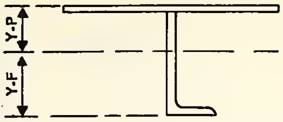
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
E-L AND L

50t

11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	82.6	97.4	816.9	6.61	9.9	8.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	76.9	93.2	770.4	6.74	10.0	8.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	71.1	89.1	723.3	6.89	10.2	8.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	68.2	87.1	699.4	6.98	10.3	8.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	83.8	89.7	662.2	5.36	7.9	7.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	79.6	86.5	633.4	5.44	8.0	7.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	77.2	84.8	617.8	5.49	8.0	7.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	75.0	83.2	602.6	5.54	8.0	7.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	72.6	81.5	586.7	5.59	8.1	7.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	70.2	79.9	570.9	5.65	8.1	7.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	67.8	78.2	554.9	5.71	8.2	7.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	60.8	75.3	514.0	5.57	8.5	6.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	65.3	76.6	538.8	5.78	8.2	7.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	52.8	70.1	460.2	5.78	8.7	6.6	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	47.7	67.1	426.0	5.94	8.9	6.3	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	53.9	64.3	389.3	4.89	7.2	6.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	47.0	59.9	349.7	5.09	7.4	5.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	43.4	57.8	329.4	5.22	7.6	5.7	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	41.1	56.6	316.1	5.32	7.7	5.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	50.0	59.2	332.9	4.54	6.7	5.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	46.7	57.0	315.0	4.60	6.8	5.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	43.7	55.4	300.0	4.73	6.9	5.4	9.47	12.00	3.89	0.700	7.00
12 x 3 1/2 x 37.0 C	30.60	39.4	53.6	278.6	4.64	7.1	5.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	40.4	53.6	283.0	4.85	7.0	5.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	36.6	52.1	263.9	4.73	7.2	5.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	35.2	51.4	256.4	4.78	7.3	5.0	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	35.8	45.1	205.3	3.85	5.7	4.5	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	31.7	42.9	187.4	4.00	5.9	4.4	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	27.4	41.2	169.3	4.02	6.2	4.1	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	28.7	41.6	174.6	4.12	6.1	4.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	25.0	40.1	158.5	4.02	6.3	4.0	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.3	40.4	160.1	4.09	6.3	4.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.9	39.3	148.7	4.10	6.5	3.8	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	39.1	43.7	191.5	3.47	4.9	4.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	36.0	42.0	179.9	3.52	5.0	4.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	32.5	40.2	166.8	3.56	5.1	4.1	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	28.6	38.4	152.2	3.61	5.3	4.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	26.6	37.4	144.3	3.63	5.4	3.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	24.3	36.5	135.4	3.64	5.6	3.7	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	39.5	43.8	172.1	3.19	3.9	4.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	38.1	40.3	162.1	3.24	4.0	4.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	33.0	37.3	144.9	3.11	4.4	3.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	36.5	36.6	151.4	3.30	4.1	4.1	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	30.5	36.0	136.7	3.16	4.5	3.8	9.73	8.00	4.00	0.875	7.00
8 x 6 x 3/4 x 28.7 L	28.70	27.7	34.6	127.4	3.21	4.6	3.7	8.44	8.00	4.00	0.750	6.00
5/8 x 28.5 L	28.42	32.1	35.1	138.8	3.36	4.3	4.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	29.7	34.3	131.8	3.38	4.4	3.8	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	24.4	33.2	116.3	3.24	4.8	3.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	27.3	33.4	124.4	3.41	4.6	3.7	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	22.6	32.5	110.5	3.26	4.9	3.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	24.5	32.6	115.9	3.43	4.7	3.6	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	20.7	31.7	103.8	3.27	5.0	3.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.7	30.9	96.6	3.28	5.2	3.1	5.06	8.00	4.00	0.437	3.50



PROPERTIES OF COMBINED BEAM AND PLATE ⊏-L AND L

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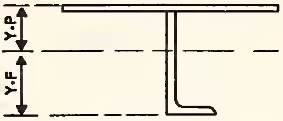
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	25.3	30.3	100.4	2.80	4.0	3.3	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	23.0	29.3	93.7	2.84	4.1	3.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.4	28.2	86.1	2.87	4.2	3.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.9	27.7	81.8	2.89	4.3	3.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.3	27.1	76.9	2.89	4.4	2.8	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.7	26.5	71.7	2.89	4.6	2.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.8	25.9	65.7	2.88	4.7	2.5	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	20.4	24.9	70.4	2.43	3.5	2.8	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	18.6	24.2	66.0	2.46	3.6	2.7	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.5	23.5	61.0	2.49	3.7	2.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.4	23.1	57.9	2.50	3.8	2.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.1	22.7	54.6	2.50	3.9	2.4	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.9	22.3	51.3	2.46	4.0	2.3	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.8	22.3	51.0	2.51	4.0	2.3	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	11.3	21.8	46.8	2.49	4.1	2.1	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.3	21.4	43.7	2.44	4.2	2.0	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.7	21.3	42.0	2.45	4.3	2.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.9	20.9	39.3	2.40	4.4	1.9	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.4	20.3	34.0	2.33	4.6	1.7	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.1	19.0	40.9	2.05	3.1	2.2	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.7	18.5	37.9	2.07	3.2	2.0	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.1	18.1	34.1	2.07	3.4	1.9	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.1	17.6	31.6	2.03	3.5	1.8	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.5	18.2	35.2	2.16	3.3	1.9	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.2	17.7	31.9	2.07	3.5	1.8	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.2	17.3	29.4	2.01	3.6	1.7	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.1	17.4	29.3	2.05	3.6	1.7	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.3	17.1	27.1	1.99	3.7	1.6	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.0	17.0	26.2	2.01	3.7	1.5	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.3	16.7	24.2	1.95	3.8	1.4	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.8	16.6	22.8	1.95	3.9	1.4	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.2	16.2	20.9	1.88	4.0	1.3	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.7	14.2	23.1	1.68	2.7	1.6	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.7	13.9	21.2	1.64	2.7	1.5	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.5	13.9	20.8	1.67	2.8	1.5	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.7	13.6	19.2	1.63	2.9	1.4	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.8	13.7	19.5	1.67	2.9	1.4	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.1	13.4	17.9	1.62	2.9	1.3	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.1	13.5	17.9	1.65	3.0	1.3	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.4	13.2	16.5	1.60	3.0	1.2	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.3	13.3	16.2	1.62	3.1	1.2	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.7	13.0	14.8	1.56	3.1	1.1	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	12.9	13.9	1.56	3.2	1.1	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	12.6	12.8	1.51	3.3	1.0	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.6	11.6	14.3	1.43	2.6	1.2	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.9	11.3	12.9	1.39	2.6	1.1	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.1	11.5	13.4	1.42	2.6	1.2	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.5	11.2	12.0	1.37	2.7	1.1	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.5	11.3	12.3	1.40	2.7	1.1	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.0	11.0	11.1	1.35	2.8	1.0	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.9	11.1	11.0	1.37	2.8	1.0	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	10.8	9.9	1.31	2.9	0.9	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	10.8	9.5	1.31	2.9	0.9	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	10.5	8.6	1.26	3.0	0.8	1.44	3.50	2.50	0.250	0.87



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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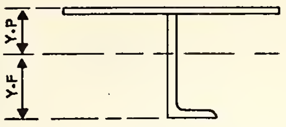
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
3 x 3 x 1/2 x 9.4 L	9.35	4.5	9.7	10.1	1.23	2.2	1.0	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.0	9.4	9.1	1.19	2.3	1.0	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.2	9.6	9.5	1.22	2.3	1.0	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.3	9.0	8.0	1.14	2.4	0.9	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.6	9.3	8.5	1.18	2.4	0.9	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.7	9.5	8.8	1.20	2.4	0.9	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.2	9.2	7.9	1.16	2.4	0.9	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.2	9.3	7.8	1.17	2.4	0.8	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.8	9.0	7.0	1.12	2.5	0.8	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.4	8.6	6.1	1.06	2.6	0.7	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.7	9.0	6.8	1.12	2.5	0.8	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.4	8.8	6.1	1.08	2.6	0.7	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	8.4	5.4	1.02	2.6	0.6	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	8.7	5.6	1.05	2.6	0.6	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.6	7.9	4.3	0.94	2.7	0.5	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	7.0	4.6	0.91	2.1	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	6.9	4.1	0.88	2.2	0.6	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	6.6	3.5	0.84	2.2	0.5	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.3	6.3	2.9	0.78	2.3	0.5	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.6	5.3	2.8	0.72	1.8	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	5.2	2.5	0.70	1.8	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	5.0	2.2	0.67	1.8	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	4.6	1.8	0.62	1.9	0.4	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	4.7	1.8	0.62	1.9	0.4	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.8	4.3	1.5	0.57	1.9	0.3	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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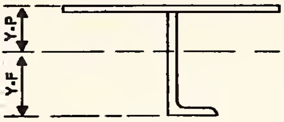
12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	85.5	109.7	879.6	6.69	10.3	8.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	79.5	105.7	831.0	6.81	10.4	7.9	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	73.4	101.8	781.3	6.95	10.6	7.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	70.3	100.0	756.0	7.03	10.7	7.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	86.8	99.8	711.1	5.44	8.2	7.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	82.4	96.8	681.4	5.52	8.3	7.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	80.0	95.1	665.2	5.57	8.3	7.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	77.6	93.5	649.4	5.61	8.4	6.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	75.1	91.9	632.8	5.66	8.4	6.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	72.6	90.3	616.2	5.72	8.5	6.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	70.0	88.7	599.4	5.78	8.6	6.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	62.9	85.5	555.2	5.63	8.8	6.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	67.5	87.2	582.5	5.84	8.6	6.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	54.5	80.6	497.8	5.81	9.1	6.2	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	49.1	77.9	460.8	5.95	9.4	5.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	55.8	73.2	421.6	4.95	7.6	5.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	48.5	69.1	379.4	5.13	7.8	5.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	44.7	67.2	357.4	5.24	8.0	5.3	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	42.2	66.2	342.8	5.32	8.1	5.2	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	51.8	67.5	360.7	4.59	7.0	5.3	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	48.3	65.3	341.8	4.65	7.1	5.2	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	45.1	63.9	325.5	4.76	7.2	5.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	40.7	61.9	302.1	4.66	7.4	4.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	41.5	62.3	306.9	4.87	7.4	4.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	37.7	60.5	286.0	4.74	7.6	4.7	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	36.2	59.9	277.7	4.77	7.7	4.6	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	29.6	56.6	239.4	4.68	8.1	4.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.0	55.5	218.2	4.74	8.4	3.9	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	37.1	52.0	223.3	3.88	6.0	4.3	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	32.7	50.0	203.8	4.01	6.2	4.1	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.2	48.3	183.5	4.00	6.5	3.8	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	29.5	48.8	189.6	4.10	6.4	3.9	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	25.7	47.2	171.7	4.00	6.7	3.6	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.0	47.6	173.3	4.06	6.7	3.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.4	46.5	160.6	4.05	6.9	3.5	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.1	44.4	142.9	3.83	7.1	3.2	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.7	43.7	124.5	3.84	7.5	2.9	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	40.5	49.9	208.3	3.51	5.1	4.2	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	37.3	48.2	195.9	3.55	5.3	4.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	33.6	46.5	181.6	3.59	5.4	3.9	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	29.5	44.7	165.6	3.62	5.6	3.7	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	27.4	43.8	156.9	3.63	5.7	3.6	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	25.0	42.8	147.1	3.63	5.9	3.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	45.4	45.4	188.7	3.25	4.2	4.2	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	41.7	44.0	177.9	3.30	4.3	4.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	34.2	42.8	158.0	3.15	4.6	3.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	37.7	42.5	166.2	3.35	4.4	3.9	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	31.6	41.6	149.1	3.19	4.7	3.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	28.6	40.2	138.9	3.23	4.9	3.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	33.1	41.0	152.2	3.39	4.6	3.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	30.6	40.2	144.4	3.41	4.7	3.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	25.1	38.8	126.7	3.25	5.0	3.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	28.0	39.4	136.1	3.42	4.9	3.5	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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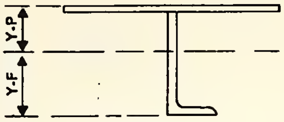
12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	23.3	38.1	120.2	3.26	5.2	3.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.2	38.6	126.6	3.42	5.0	3.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.3	37.4	112.7	3.25	5.3	3.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.2	36.6	104.7	3.24	5.4	2.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	26.2	35.2	109.8	2.83	4.2	3.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	23.7	34.2	102.4	2.85	4.3	3.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.0	33.2	93.9	2.87	4.5	2.8	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.4	32.6	89.0	2.88	4.6	2.7	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.8	32.0	83.6	2.87	4.7	2.6	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.1	31.5	77.7	2.86	4.8	2.5	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.2	30.8	70.9	2.83	5.0	2.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	21.1	29.0	77.2	2.45	3.7	2.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.2	28.4	72.2	2.47	3.8	2.5	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.0	27.7	66.6	2.49	3.9	2.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.8	27.3	63.1	2.49	4.0	2.3	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.4	26.8	59.3	2.48	4.1	2.2	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.2	26.4	55.6	2.43	4.2	2.1	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.1	26.4	55.2	2.47	4.2	2.1	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.0	26.2	52.1	2.45	4.3	2.0	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.6	25.9	50.5	2.44	4.4	1.9	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.5	25.4	47.1	2.38	4.5	1.8	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.4	25.5	46.8	2.39	4.5	1.8	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	9.9	25.4	45.0	2.38	4.5	1.8	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.1	24.9	42.0	2.33	4.6	1.7	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.5	24.2	36.2	2.24	4.8	1.5	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.5	22.3	44.8	2.05	3.3	2.0	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.1	21.9	41.4	2.05	3.4	1.9	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.3	21.4	37.0	2.04	3.6	1.7	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.3	20.9	34.2	1.99	3.7	1.6	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.4	21.1	34.4	2.02	3.7	1.6	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.4	20.6	31.6	1.96	3.8	1.5	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.3	20.7	31.5	1.99	3.8	1.5	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.5	20.3	29.0	1.93	3.9	1.4	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.1	20.3	28.0	1.94	3.9	1.4	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.4	19.8	25.8	1.88	4.0	1.3	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.9	19.8	24.2	1.87	4.1	1.2	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.3	19.3	22.1	1.80	4.2	1.1	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.1	17.4	29.2	1.68	2.6	1.7	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	9.9	17.2	27.1	1.69	2.7	1.6	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.0	16.9	25.2	1.66	2.8	1.5	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.9	16.4	23.1	1.61	2.9	1.4	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.5	16.9	24.5	1.68	2.9	1.4	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.7	16.5	22.6	1.64	2.9	1.4	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.7	16.7	22.8	1.67	2.9	1.4	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	6.8	16.2	20.7	1.60	3.0	1.3	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.0	16.3	21.1	1.62	3.0	1.3	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.2	15.9	19.3	1.58	3.1	1.2	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.9	16.4	20.9	1.64	3.0	1.3	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.2	16.1	19.2	1.59	3.1	1.2	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.5	15.7	17.7	1.55	3.2	1.1	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.9	16.1	18.6	1.60	3.2	1.2	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.4	15.8	17.3	1.56	3.2	1.1	2.25	4.00	3.50	0.312	1.25



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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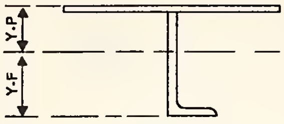
12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	4.8	15.4	15.7	1.50	3.3	1.0	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.9	15.7	16.1	1.53	3.3	1.0	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	15.3	14.8	1.49	3.3	1.0	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	14.9	13.5	1.43	3.4	0.9	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.7	13.8	15.4	1.40	2.7	1.1	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.0	13.3	13.9	1.35	2.8	1.0	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.2	13.6	14.4	1.38	2.8	1.1	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.6	13.2	12.9	1.33	2.8	1.0	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.6	13.4	13.1	1.35	2.8	1.0	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.1	13.0	11.8	1.30	2.9	0.9	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.0	13.1	11.7	1.31	2.9	0.9	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	12.7	10.5	1.25	3.0	0.8	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	12.7	10.0	1.25	3.0	0.8	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	12.3	9.1	1.20	3.1	0.7	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.1	11.1	9.8	1.15	2.4	0.9	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.7	11.0	9.2	1.13	2.5	0.8	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.3	10.8	8.4	1.11	2.5	0.8	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	10.5	7.5	1.07	2.6	0.7	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	10.2	6.5	1.02	2.7	0.6	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	9.7	5.6	0.96	2.7	0.6	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	8.2	4.9	0.87	2.2	0.6	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	8.0	4.4	0.84	2.3	0.5	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	7.6	3.7	0.79	2.3	0.5	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.6	6.1	3.0	0.69	1.8	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	6.0	2.7	0.67	1.9	0.5	1.15	2.00	2.00	0.312	0.62
x 1/4 x 3.19 L	3.20	1.2	5.7	2.3	0.63	1.9	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	5.2	1.9	0.58	1.9	0.4	0.81	2.00	1.50	0.250	0.50



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE

[-L AND L

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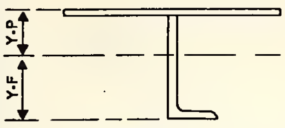
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	88.1	122.9	941.0	6.75	10.7	7.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	81.8	119.0	889.7	6.86	10.9	7.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	75.5	115.4	836.9	6.98	11.1	7.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	72.2	113.6	809.7	7.04	11.2	7.1	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	89.6	110.7	759.8	5.51	8.5	6.9	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	85.0	107.7	728.9	5.58	8.6	6.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	82.5	106.1	712.0	5.63	8.6	6.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	80.0	104.6	695.3	5.67	8.7	6.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	77.4	103.0	678.0	5.72	8.8	6.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	74.7	101.5	660.4	5.77	8.8	6.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	72.1	100.0	642.6	5.82	8.9	6.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	64.9	96.4	595.0	5.66	9.2	6.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	69.3	98.6	624.6	5.88	9.0	6.3	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	56.0	91.8	533.5	5.82	9.5	5.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	50.2	89.3	493.2	5.93	9.8	5.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	57.5	82.8	452.8	4.98	7.9	5.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	49.8	78.9	407.5	5.14	8.2	5.2	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	45.8	77.2	383.5	5.23	8.4	5.0	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	43.1	76.3	367.5	5.29	8.5	4.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	53.4	76.3	387.6	4.62	7.3	5.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	49.7	74.2	367.4	4.67	7.4	5.0	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	46.3	73.0	349.6	4.77	7.6	4.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	41.8	70.7	324.1	4.66	7.8	4.6	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	42.5	71.6	329.3	4.85	7.7	4.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	38.7	69.4	306.5	4.72	7.9	4.4	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	37.1	68.9	297.4	4.75	8.0	4.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	30.3	65.4	255.6	4.62	8.4	3.9	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.5	64.5	232.0	4.65	8.7	3.6	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	38.2	59.3	240.3	3.90	6.3	4.1	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	33.5	57.5	218.9	4.00	6.5	3.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.8	55.8	196.6	3.97	6.8	3.5	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	30.1	56.5	203.2	4.07	6.7	3.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	26.3	54.6	183.6	3.95	7.0	3.4	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.5	55.2	185.1	4.01	7.0	3.4	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.8	54.1	171.2	3.98	7.2	3.2	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.6	51.6	152.1	3.76	7.4	2.9	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.9	51.0	131.6	3.73	7.8	2.6	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	41.8	56.5	224.5	3.54	5.4	4.0	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	38.4	54.9	211.2	3.58	5.5	3.8	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	34.5	53.2	195.6	3.60	5.7	3.7	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	30.3	51.4	178.1	3.61	5.9	3.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	28.1	50.5	168.6	3.61	6.0	3.3	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	25.6	49.5	157.7	3.60	6.2	3.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	46.8	51.6	204.8	3.29	4.4	4.0	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	42.9	50.3	193.1	3.33	4.5	3.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	35.2	48.7	170.6	3.18	4.8	3.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	38.7	48.8	180.2	3.37	4.7	3.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	32.5	47.5	161.0	3.21	5.0	3.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	29.4	46.2	149.8	3.23	5.1	3.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	33.9	47.3	164.8	3.40	4.9	3.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	31.3	46.5	156.1	3.40	5.0	3.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	25.7	44.8	136.4	3.24	5.3	3.0	7.11	8.00	4.00	0.625	5.00



PROPERTIES OF
COMBINED BEAM AND PLATE
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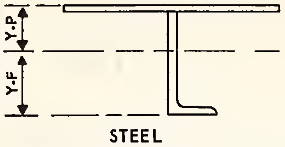
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 6 x 1/2 x 23.0 L	22.95	28.6	45.7	146.9	3.41	5.1	3.2	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	23.8	44.1	129.1	3.23	5.4	2.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.7	44.9	136.2	3.39	5.3	3.0	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.8	43.3	120.8	3.22	5.6	2.8	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	19.6	42.5	112.0	3.19	5.7	2.6	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	27.0	40.3	118.7	2.83	4.4	2.9	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	24.4	39.4	110.5	2.85	4.5	2.8	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.5	38.4	101.1	2.86	4.7	2.6	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.9	37.8	95.6	2.85	4.8	2.5	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.1	37.2	89.6	2.83	4.9	2.4	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.4	36.6	83.1	2.81	5.1	2.3	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.4	35.9	75.5	2.76	5.2	2.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	21.7	33.4	83.5	2.45	3.8	2.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.7	32.8	78.0	2.46	4.0	2.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.4	32.1	71.7	2.47	4.1	2.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.1	31.7	67.8	2.46	4.2	2.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.7	31.2	63.5	2.44	4.3	2.0	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.5	30.6	59.5	2.39	4.4	1.9	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.3	30.8	59.0	2.42	4.4	1.9	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.3	30.5	55.4	2.39	4.5	1.8	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.8	30.2	53.7	2.37	4.6	1.8	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.7	29.6	50.0	2.31	4.7	1.7	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.6	29.7	49.6	2.32	4.7	1.7	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.1	29.6	47.7	2.31	4.7	1.6	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.2	29.0	44.4	2.25	4.8	1.5	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.6	28.2	38.0	2.15	5.0	1.3	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.9	25.9	48.3	2.03	3.5	1.9	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.4	25.4	44.4	2.03	3.6	1.7	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.5	24.9	39.5	2.00	3.8	1.6	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.5	24.3	36.4	1.94	3.8	1.5	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.5	24.5	36.7	1.97	3.8	1.5	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.5	23.9	33.6	1.91	3.9	1.4	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.4	24.1	33.4	1.93	4.0	1.4	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.6	23.5	30.7	1.87	4.0	1.3	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.2	23.6	29.6	1.87	4.1	1.3	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.5	23.0	27.2	1.81	4.2	1.2	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.0	23.0	25.4	1.78	4.2	1.1	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.4	22.3	23.2	1.72	4.3	1.0	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.4	20.2	31.6	1.67	2.8	1.6	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.1	20.0	29.2	1.67	2.9	1.5	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.2	19.6	27.1	1.63	3.0	1.4	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.1	19.0	24.7	1.58	3.0	1.3	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.7	19.7	26.2	1.65	3.0	1.3	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.8	19.2	24.1	1.60	3.1	1.3	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.9	19.4	24.3	1.62	3.1	1.3	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.0	18.7	22.1	1.55	3.2	1.2	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.1	19.0	22.4	1.58	3.2	1.2	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.3	18.5	20.5	1.53	3.2	1.1	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.0	19.1	22.2	1.59	3.2	1.2	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.3	18.7	20.4	1.54	3.3	1.1	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.6	18.2	18.7	1.49	3.3	1.0	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.0	18.7	19.7	1.54	3.3	1.1	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.5	18.3	18.2	1.50	3.3	1.0	2.25	4.00	3.50	0.312	1.25



PROPERTIES OF COMBINED BEAM AND PLATE
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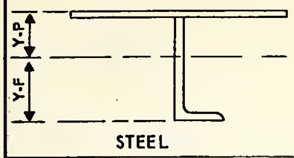
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	4.9	17.8	16.6	1.44	3.4	0.9	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.0	18.1	16.9	1.47	3.4	0.9	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.5	17.7	15.5	1.42	3.5	0.9	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	17.2	14.2	1.36	3.5	0.8	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.8	16.0	16.4	1.36	2.8	1.0	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.1	15.4	14.7	1.30	2.9	1.0	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.3	15.8	15.3	1.33	2.9	1.0	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.6	15.2	13.7	1.28	2.9	0.9	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.7	15.5	13.9	1.30	2.9	0.9	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.1	15.0	12.5	1.25	3.0	0.8	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.1	15.1	12.3	1.25	3.0	0.8	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.6	14.6	11.0	1.20	3.1	0.8	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.4	14.6	10.5	1.19	3.1	0.7	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	14.0	9.5	1.13	3.2	0.7	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.1	12.8	10.4	1.11	2.5	0.8	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.8	12.6	9.7	1.09	2.6	0.8	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.4	12.4	8.9	1.06	2.6	0.7	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	12.0	7.9	1.02	2.7	0.7	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	11.6	6.7	0.97	2.8	0.6	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	10.9	5.9	0.91	2.8	0.5	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	9.3	5.1	0.83	2.3	0.6	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	2.0	9.0	4.6	0.80	2.3	0.5	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	8.5	3.9	0.75	2.4	0.5	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.7	6.8	3.1	0.66	1.9	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.5	6.6	2.8	0.63	1.9	0.4	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	6.3	2.4	0.60	2.0	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	5.7	2.0	0.55	2.0	0.4	0.81	2.00	1.50	0.250	0.50



PROPERTIES OF COMBINED BEAM AND PLATE

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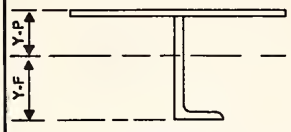
15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	90.5	137.2	1,001.8	6.78	11.1	7.3	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	84.0	133.6	947.4	6.88	11.3	7.1	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	77.3	130.1	890.8	6.98	11.5	6.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	73.8	128.5	861.6	7.03	11.7	6.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	92.3	122.4	809.1	5.56	8.8	6.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	87.5	119.6	776.6	5.63	8.9	6.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	84.8	118.0	758.8	5.67	8.9	6.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	82.2	116.6	741.2	5.71	9.0	6.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	79.5	115.1	722.8	5.75	9.1	6.3	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	76.7	113.6	704.1	5.80	9.2	6.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	73.9	112.2	685.1	5.84	9.3	6.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	66.6	108.3	634.1	5.68	9.5	5.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	71.0	110.9	665.8	5.89	9.4	6.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	57.3	103.9	567.8	5.80	9.9	5.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	51.3	101.7	523.9	5.88	10.2	5.2	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	59.1	93.1	483.4	5.00	8.2	5.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	51.0	89.5	434.4	5.12	8.5	4.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	46.7	88.0	408.2	5.19	8.7	4.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	43.9	87.2	390.6	5.23	8.9	4.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	54.8	85.8	413.9	4.64	7.6	4.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	51.0	83.8	392.3	4.67	7.7	4.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	47.3	82.8	372.7	4.75	7.9	4.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	42.8	80.3	345.2	4.64	8.1	4.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	43.4	81.5	350.4	4.82	8.1	4.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	39.5	79.1	326.0	4.68	8.3	4.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	37.8	78.6	315.9	4.70	8.4	4.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	30.9	75.0	270.5	4.55	8.8	3.6	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.9	74.2	244.6	4.55	9.1	3.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	39.2	67.2	256.8	3.89	6.6	3.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	34.2	65.6	233.3	3.97	6.8	3.6	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	29.4	63.8	208.8	3.92	7.1	3.3	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	30.7	64.8	215.9	4.02	7.0	3.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	26.8	62.6	194.6	3.89	7.3	3.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.9	63.4	196.1	3.94	7.3	3.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	24.2	62.2	180.9	3.89	7.5	2.9	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.9	59.2	160.4	3.67	7.7	2.7	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.2	58.7	137.8	3.61	8.0	2.3	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	42.9	63.7	240.5	3.55	5.6	3.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	39.4	62.1	226.1	3.58	5.7	3.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	35.4	60.4	209.1	3.59	5.9	3.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	31.0	58.7	190.0	3.59	6.1	3.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	28.7	57.7	179.5	3.58	6.3	3.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	26.1	56.7	167.6	3.55	6.4	3.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	48.1	58.4	220.8	3.32	4.6	3.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	44.0	57.0	208.0	3.35	4.7	3.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	36.2	55.1	182.9	3.18	5.1	3.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	39.6	55.7	193.9	3.38	4.9	3.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	33.3	53.9	172.4	3.21	5.2	3.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	30.1	52.6	160.2	3.22	5.3	3.0	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	34.6	54.1	176.8	3.39	5.1	3.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	31.9	53.3	167.2	3.39	5.2	3.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	26.3	51.2	145.4	3.21	5.5	2.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	29.1	52.5	157.0	3.37	5.4	3.0	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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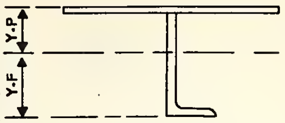
15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	24.3	50.5	137.5	3.20	5.7	2.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	26.1	51.6	145.2	3.35	5.6	2.8	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	22.2	49.7	128.4	3.17	5.8	2.6	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.0	48.8	118.6	3.13	5.9	2.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	27.7	45.9	127.3	2.83	4.6	2.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	24.9	44.9	118.2	2.83	4.7	2.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.9	43.9	107.8	2.83	4.9	2.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.2	43.4	101.8	2.81	5.0	2.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.5	42.7	95.1	2.78	5.1	2.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.6	42.1	87.9	2.75	5.3	2.1	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.6	41.3	79.7	2.69	5.4	1.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	22.3	38.1	89.6	2.44	4.0	2.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	20.1	37.5	83.5	2.44	4.1	2.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.8	36.8	76.4	2.43	4.3	2.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.4	36.4	72.2	2.42	4.4	2.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.0	35.9	67.4	2.39	4.5	1.9	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.7	35.2	63.0	2.34	4.6	1.8	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.5	35.4	62.4	2.36	4.6	1.8	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.4	35.0	58.5	2.33	4.7	1.7	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.9	34.8	56.6	2.31	4.7	1.6	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.9	34.0	52.6	2.24	4.8	1.5	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.8	34.2	52.2	2.25	4.8	1.5	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.2	34.0	50.0	2.23	4.9	1.5	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.4	33.3	46.5	2.17	5.0	1.4	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.7	32.3	39.6	2.06	5.1	1.2	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.2	29.6	51.6	2.00	3.6	1.7	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.6	29.1	47.3	1.99	3.8	1.6	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.7	28.5	41.8	1.95	3.9	1.5	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.6	27.8	38.5	1.89	4.0	1.4	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.7	28.1	38.7	1.91	4.0	1.4	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.7	27.3	35.4	1.85	4.1	1.3	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.6	27.6	35.1	1.87	4.1	1.3	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.7	26.9	32.2	1.80	4.2	1.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.3	27.0	31.0	1.80	4.2	1.1	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.6	26.3	28.4	1.74	4.3	1.1	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.1	26.2	26.4	1.71	4.4	1.0	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.4	25.4	24.1	1.64	4.4	1.0	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.6	23.2	33.9	1.65	2.9	1.5	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.3	22.9	31.1	1.64	3.0	1.4	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.4	22.4	28.9	1.60	3.1	1.3	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.3	21.8	26.3	1.54	3.2	1.2	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.9	22.5	27.8	1.61	3.1	1.2	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.0	21.9	25.5	1.56	3.2	1.2	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.0	22.2	25.7	1.58	3.2	1.2	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.1	21.4	23.3	1.51	3.3	1.1	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.2	21.7	23.7	1.53	3.3	1.1	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.4	21.1	21.6	1.48	3.4	1.0	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.1	21.9	23.4	1.54	3.3	1.1	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.4	21.3	21.4	1.49	3.4	1.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.7	20.7	19.6	1.43	3.4	0.9	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.1	21.3	20.6	1.48	3.4	1.0	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.5	20.8	19.1	1.43	3.5	0.9	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.9	20.1	17.3	1.38	3.5	0.9	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.0	20.6	17.7	1.40	3.5	0.9	1.94	4.00	4.00	0.250	1.00

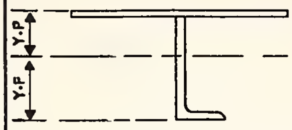


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.5	20.0	16.2	1.35	3.6	0.8	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.1	19.4	14.7	1.30	3.6	0.8	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.9	18.2	17.3	1.31	2.9	1.0	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.2	17.5	15.5	1.26	3.0	0.9	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.4	17.9	16.1	1.29	3.0	0.9	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.7	17.2	14.3	1.23	3.0	0.8	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.8	17.5	14.6	1.25	3.0	0.8	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.2	16.9	13.0	1.19	3.1	0.8	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.1	17.0	12.8	1.20	3.1	0.8	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.6	16.4	11.5	1.14	3.2	0.7	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.4	16.4	10.9	1.13	3.2	0.7	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	15.7	9.8	1.08	3.2	0.6	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.2	14.5	11.0	1.07	2.6	0.8	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.8	14.2	10.2	1.05	2.7	0.7	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.4	13.9	9.3	1.02	2.7	0.7	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	3.0	13.4	8.2	0.97	2.8	0.6	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.5	12.9	7.0	0.92	2.8	0.5	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	12.1	6.1	0.86	2.9	0.5	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.3	10.3	5.4	0.79	2.4	0.5	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	2.0	9.9	4.8	0.76	2.4	0.5	1.31	2.50	2.00	0.312	0.78



PROPERTIES OF
COMBINED BEAM AND PLATE
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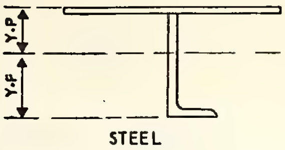
17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	94.8	169.9	1,121.6	6.79	11.8	6.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	87.7	166.6	1,059.4	6.85	12.1	6.4	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	80.4	163.5	994.0	6.90	12.4	6.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	76.7	162.2	960.0	6.93	12.5	5.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	97.2	149.3	908.8	5.63	9.4	6.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	92.0	146.6	872.4	5.68	9.5	6.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	89.1	145.2	852.2	5.71	9.6	5.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	86.2	143.9	832.3	5.73	9.7	5.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	83.2	142.5	811.2	5.76	9.7	5.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	80.2	141.2	789.8	5.79	9.8	5.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	77.1	140.0	767.8	5.82	10.0	5.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	69.7	135.2	709.9	5.65	10.2	5.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	74.0	138.9	745.3	5.85	10.1	5.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	59.5	131.3	632.5	5.71	10.6	4.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	53.0	129.6	580.6	5.73	11.0	4.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	61.8	116.6	542.7	4.97	8.8	4.7	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	52.9	113.5	485.2	5.04	9.2	4.3	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	48.3	112.4	453.9	5.06	9.4	4.0	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	45.2	111.9	432.8	5.07	9.6	3.9	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	57.3	107.4	465.0	4.62	8.1	4.3	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	53.2	105.6	439.9	4.63	8.3	4.2	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	49.2	104.9	416.3	4.67	8.5	4.0	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	44.5	101.8	384.8	4.55	8.7	3.8	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	44.8	104.0	389.6	4.70	8.7	3.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	40.9	100.8	361.8	4.55	8.8	3.6	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	39.1	100.5	349.8	4.55	9.0	3.5	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	31.8	96.2	297.4	4.36	9.3	3.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.6	95.7	266.5	4.30	9.7	2.8	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	40.9	85.0	288.2	3.84	7.0	3.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	35.4	83.7	259.9	3.87	7.3	3.1	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	30.3	81.7	231.0	3.78	7.6	2.8	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	31.6	83.1	238.9	3.87	7.6	2.9	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.6	80.4	214.3	3.73	7.8	2.7	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	27.7	81.4	215.6	3.77	7.8	2.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	24.8	80.2	197.9	3.69	8.0	2.5	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.5	76.0	175.2	3.48	8.1	2.3	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.5	75.6	148.6	3.37	8.5	2.0	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	44.9	79.9	271.5	3.55	6.0	3.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	41.1	78.4	254.6	3.55	6.2	3.2	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	36.8	76.6	234.6	3.53	6.4	3.1	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	32.1	74.8	212.0	3.50	6.6	2.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	29.6	73.8	199.6	3.47	6.7	2.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	26.9	72.7	185.5	3.42	6.9	2.6	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	50.3	73.6	252.1	3.34	5.0	3.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	45.9	72.3	236.8	3.35	5.2	3.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	37.9	69.3	206.6	3.17	5.5	3.0	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	41.2	70.9	219.9	3.36	5.3	3.1	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	34.7	68.2	194.2	3.17	5.6	2.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	31.2	66.9	179.7	3.16	5.8	2.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	35.8	69.4	199.3	3.33	5.6	2.9	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	32.9	68.5	187.7	3.31	5.7	2.7	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	27.2	65.4	162.1	3.12	6.0	2.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	30.0	67.6	175.4	3.28	5.8	2.6	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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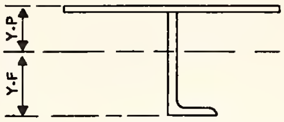
17.85# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	25.1	64.6	152.7	3.09	6.1	2.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	26.8	66.6	161.3	3.22	6.0	2.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	22.8	63.7	141.9	3.04	6.2	2.2	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.5	62.7	130.4	2.98	6.4	2.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	28.8	58.3	143.4	2.79	5.0	2.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	25.9	57.3	132.6	2.77	5.1	2.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	22.7	56.2	120.1	2.73	5.3	2.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.9	55.5	112.9	2.70	5.4	2.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.0	54.8	105.0	2.66	5.5	1.9	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.1	54.0	96.6	2.61	5.6	1.8	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.0	52.9	86.9	2.53	5.8	1.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	23.2	48.6	101.0	2.40	4.4	2.1	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	20.9	47.8	93.6	2.38	4.5	2.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.4	47.1	85.1	2.35	4.6	1.8	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.0	46.5	80.0	2.32	4.7	1.7	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.4	45.9	74.4	2.28	4.8	1.6	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.1	44.9	69.2	2.22	4.9	1.5	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.9	45.3	68.5	2.23	4.9	1.5	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.7	44.8	63.8	2.19	5.0	1.4	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.2	44.4	61.7	2.16	5.0	1.4	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.1	43.3	57.1	2.09	5.1	1.3	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.0	43.5	56.6	2.10	5.1	1.3	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.4	43.2	54.1	2.07	5.2	1.3	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.6	42.2	50.2	2.01	5.2	1.2	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.8	40.7	42.3	1.89	5.4	1.0	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.7	37.7	57.6	1.93	3.9	1.5	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.0	37.1	52.4	1.90	4.0	1.4	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.0	36.2	45.9	1.84	4.2	1.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.9	35.3	42.1	1.78	4.2	1.2	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.9	35.7	42.3	1.80	4.3	1.2	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.9	34.6	38.5	1.73	4.3	1.1	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.8	35.0	38.1	1.74	4.3	1.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.9	33.9	34.8	1.67	4.4	1.0	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.5	33.9	33.4	1.66	4.5	1.0	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.8	32.9	30.5	1.59	4.5	0.9	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.2	32.6	28.3	1.56	4.6	0.9	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.6	31.4	25.7	1.49	4.6	0.8	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.1	29.6	38.0	1.59	3.2	1.3	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.7	29.1	34.7	1.56	3.2	1.2	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.7	28.4	32.0	1.52	3.3	1.1	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.6	27.5	29.0	1.46	3.4	1.1	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.1	28.6	30.7	1.52	3.4	1.1	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.2	27.7	28.1	1.46	3.4	1.0	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.2	28.1	28.2	1.48	3.4	1.0	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.3	26.8	25.5	1.41	3.5	1.0	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.4	27.3	25.8	1.43	3.5	0.9	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.6	26.3	23.5	1.37	3.5	0.9	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.2	27.5	25.4	1.43	3.5	0.9	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.5	26.6	23.3	1.38	3.6	0.9	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.9	25.7	21.2	1.32	3.6	0.8	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.2	26.6	22.3	1.36	3.6	0.8	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.7	25.8	20.6	1.32	3.6	0.8	2.25	4.00	3.50	0.312	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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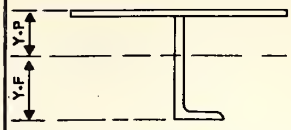
17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.0	24.8	18.6	1.26	3.7	0.7	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.1	25.4	19.0	1.28	3.7	0.7	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.6	24.6	17.3	1.23	3.7	0.7	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.2	23.6	15.7	1.18	3.8	0.7	1.69	4.00	3.00	0.250	1.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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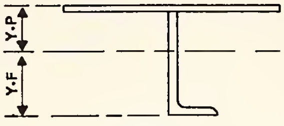
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	98.3	206.4	1,232.1	6.72	12.5	6.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	90.7	203.4	1,161.0	6.75	12.8	5.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	82.9	200.8	1,085.8	6.76	13.1	5.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	78.9	199.7	1,046.5	6.76	13.3	5.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	101.4	179.4	1,004.0	5.64	9.9	5.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	95.7	176.9	962.8	5.67	10.1	5.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	92.6	175.6	939.9	5.69	10.1	5.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	89.6	174.4	917.1	5.70	10.2	5.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	86.3	173.2	893.0	5.72	10.3	5.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	83.1	172.0	868.4	5.73	10.5	5.0	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	79.8	170.9	843.0	5.74	10.6	4.9	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	72.2	165.1	778.7	5.56	10.8	4.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	76.4	170.0	817.0	5.76	10.7	4.8	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	61.3	161.7	689.2	5.56	11.2	4.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	54.3	160.3	628.9	5.52	11.6	3.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	64.0	142.6	596.4	4.90	9.3	4.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	54.5	140.0	529.5	4.90	9.7	3.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	49.5	139.1	493.1	4.89	10.0	3.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	46.3	138.9	468.4	4.87	10.1	3.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	59.4	131.4	511.3	4.55	8.6	3.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	55.0	129.6	482.5	4.54	8.8	3.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	50.6	129.2	454.5	4.55	9.0	3.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	45.8	125.4	419.2	4.42	9.2	3.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	46.0	128.5	423.2	4.54	9.2	3.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	42.0	124.6	392.5	4.39	9.4	3.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	40.0	124.3	378.5	4.37	9.5	3.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.6	119.2	319.6	4.15	9.8	2.7	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.1	118.8	284.2	4.05	10.1	2.4	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	42.3	104.5	315.9	3.75	7.5	3.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	36.4	103.4	282.7	3.73	7.8	2.7	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.1	101.0	249.6	3.62	8.0	2.5	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	32.3	103.0	258.0	3.70	8.0	2.5	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.2	99.5	230.7	3.55	8.2	2.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.3	100.8	231.7	3.58	8.2	2.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.3	99.3	211.7	3.49	8.4	2.1	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	22.0	93.0	187.2	3.28	8.5	2.0	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.8	93.1	157.1	3.13	8.8	1.7	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	46.6	97.7	299.7	3.50	6.4	3.1	12.00	9.00	4.00	1.000	9.00
x 7/8 x 36.1 L	36.07	42.5	96.2	280.1	3.48	6.6	2.9	10.61	9.00	4.00	0.875	7.87
x 3/4 x 31.3 L	31.25	37.9	94.3	257.0	3.44	6.8	2.7	9.19	9.00	4.00	0.750	6.75
x 5/8 x 26.3 L	26.28	33.0	92.3	230.9	3.38	7.0	2.5	7.73	9.00	4.00	0.625	5.62
x 9/16 x 23.8 L	23.80	30.4	91.2	216.6	3.33	7.1	2.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.6	89.9	200.5	3.27	7.3	2.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	52.1	90.5	280.9	3.32	5.4	3.1	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	47.4	89.1	262.9	3.31	5.5	3.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	39.2	85.0	228.1	3.12	5.8	2.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	42.4	87.7	242.9	3.29	5.7	2.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	35.9	83.8	213.6	3.10	6.0	2.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	32.2	82.4	196.7	3.06	6.1	2.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	36.8	85.9	218.8	3.24	6.0	2.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	33.8	84.9	205.3	3.20	6.1	2.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	27.9	80.7	176.4	3.00	6.3	2.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	30.7	83.9	191.0	3.15	6.2	2.3	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF
COMBINED BEAM AND PLATE
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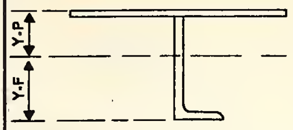
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 9/16 x 21.9 L	21.86	25.8	79.8	165.5	2.96	6.4	2.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.4	82.6	174.8	3.08	6.4	2.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.4	78.6	153.2	2.90	6.6	1.9	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.0	77.4	140.2	2.83	6.7	1.8	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	29.8	71.7	157.7	2.72	5.3	2.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	26.6	70.6	145.0	2.68	5.4	2.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.3	69.3	130.6	2.62	5.6	1.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.4	68.4	122.3	2.58	5.7	1.8	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.4	67.4	113.2	2.53	5.8	1.7	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.5	66.4	103.6	2.46	5.9	1.6	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.3	64.9	92.8	2.37	6.1	1.4	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	23.9	59.7	111.0	2.33	4.6	1.9	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.5	58.9	102.4	2.29	4.8	1.7	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.8	57.9	92.4	2.24	4.9	1.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.4	57.2	86.6	2.20	5.0	1.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.8	56.3	80.1	2.16	5.1	1.4	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.5	55.0	74.4	2.09	5.1	1.4	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.2	55.4	73.4	2.10	5.2	1.3	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	13.0	54.6	68.2	2.05	5.3	1.2	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.5	54.1	65.8	2.02	5.3	1.2	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.4	52.6	60.8	1.95	5.3	1.2	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.2	52.8	60.1	1.95	5.4	1.1	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.6	52.4	57.4	1.92	5.4	1.1	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.7	51.0	53.1	1.86	5.5	1.0	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	8.0	48.7	44.5	1.73	5.6	0.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	15.2	46.1	62.7	1.85	4.1	1.4	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.4	45.3	56.8	1.80	4.2	1.3	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.3	44.0	49.3	1.73	4.4	1.1	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.2	42.6	45.1	1.67	4.4	1.1	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.2	43.2	45.2	1.68	4.5	1.0	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.1	41.6	41.1	1.61	4.5	1.0	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.9	42.1	40.5	1.61	4.5	1.0	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.1	40.6	37.0	1.55	4.6	0.9	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.6	40.5	35.3	1.53	4.6	0.9	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.9	39.1	32.2	1.47	4.7	0.8	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.3	38.5	29.7	1.43	4.7	0.8	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.7	36.9	27.0	1.37	4.8	0.7	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.4	36.1	41.6	1.52	3.3	1.2	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	11.0	35.4	37.7	1.48	3.4	1.1	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.9	34.4	34.7	1.44	3.5	1.0	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.8	33.1	31.3	1.38	3.6	0.9	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.3	34.5	33.0	1.43	3.5	1.0	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.4	33.3	30.2	1.37	3.6	0.9	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.4	33.7	30.2	1.38	3.6	0.9	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.5	32.1	27.4	1.32	3.6	0.9	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.6	32.6	27.7	1.33	3.7	0.8	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.8	31.3	25.1	1.28	3.7	0.8	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.4	32.8	27.2	1.33	3.7	0.8	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.7	31.6	24.8	1.28	3.7	0.8	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	6.0	30.4	22.5	1.23	3.8	0.7	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.3	31.4	23.7	1.26	3.7	0.8	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.8	30.4	21.8	1.22	3.8	0.7	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	5.1	29.0	19.7	1.16	3.8	0.7	2.09	4.00	3.00	0.312	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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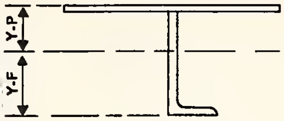
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	$IN.^3$	$IN.^3$	$IN.^4$	IN.	IN.	IN.	$IN.^2$	IN.	IN.	IN.	$IN.^2$
4 x 4 x 1/4 x 6.6 L	6.60	5.2	29.7	20.0	1.18	3.8	0.7	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.7	28.5	18.3	1.13	3.9	0.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.3	27.2	16.5	1.08	3.9	0.6	1.69	4.00	3.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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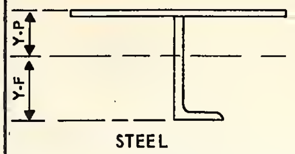
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	101.3	247.6	1,334.8	6.61	13.2	5.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	93.3	244.9	1,254.0	6.59	13.4	5.1	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	85.0	242.7	1,168.5	6.56	13.7	4.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	80.7	241.8	1,123.6	6.54	13.9	4.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	105.0	213.4	1,095.5	5.60	10.4	5.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	99.0	211.0	1,048.8	5.61	10.6	5.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	95.7	209.8	1,022.7	5.62	10.7	4.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	92.4	208.7	996.8	5.62	10.8	4.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	89.0	207.6	969.3	5.62	10.9	4.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	85.5	206.6	941.2	5.62	11.0	4.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	82.0	205.7	912.2	5.62	11.1	4.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	74.3	198.6	841.7	5.44	11.3	4.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	78.4	204.8	882.3	5.61	11.3	4.3	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	62.8	195.5	739.7	5.37	11.8	3.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	55.4	194.4	671.0	5.29	12.1	3.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	65.9	171.7	645.6	4.79	9.8	3.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	55.8	169.3	569.0	4.74	10.2	3.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	50.5	168.6	527.3	4.69	10.4	3.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.1	168.5	499.1	4.65	10.6	3.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	61.1	158.1	553.7	4.44	9.1	3.5	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	56.4	156.3	521.0	4.41	9.2	3.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	51.8	156.1	488.5	4.39	9.4	3.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	46.9	151.4	449.8	4.25	9.6	3.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	46.9	155.6	452.6	4.35	9.7	2.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	42.9	150.7	419.3	4.21	9.8	2.8	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	40.8	150.4	403.4	4.18	9.9	2.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.2	144.0	338.6	3.93	10.2	2.4	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.5	143.5	299.0	3.80	10.5	2.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	43.4	125.9	340.9	3.64	7.9	2.7	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	37.2	124.9	302.7	3.58	8.1	2.4	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.7	121.9	265.6	3.44	8.4	2.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	32.9	124.5	274.6	3.52	8.4	2.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.7	119.9	244.7	3.36	8.5	2.0	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.7	121.6	245.4	3.38	8.5	2.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.7	119.6	223.4	3.28	8.7	1.9	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	22.4	112.6	197.3	3.09	8.8	1.8	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	18.1	111.2	164.1	2.91	9.1	1.5	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	48.0	117.4	325.7	3.42	6.8	2.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	43.7	115.8	303.3	3.39	6.9	2.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	38.9	113.7	277.0	3.33	7.1	2.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	33.7	111.3	247.5	3.24	7.3	2.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.0	110.0	231.5	3.18	7.5	2.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.1	108.3	213.4	3.11	7.6	2.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	53.6	109.1	307.7	3.27	5.7	2.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	48.6	107.7	286.8	3.24	5.9	2.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	40.4	102.1	247.7	3.04	6.1	2.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	43.4	106.1	263.8	3.20	6.1	2.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	36.8	100.9	231.1	3.01	6.3	2.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.0	99.3	211.8	2.95	6.4	2.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	37.5	104.0	236.2	3.12	6.3	2.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	34.4	102.7	220.8	3.07	6.4	2.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	28.5	97.1	188.9	2.87	6.6	1.9	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.3	101.4	204.6	3.01	6.5	2.0	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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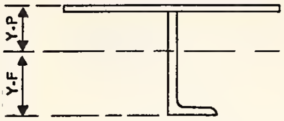
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.3	96.0	176.7	2.82	6.7	1.8	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.8	99.7	186.4	2.93	6.7	1.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.8	94.4	162.9	2.75	6.8	1.7	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.3	92.8	148.5	2.67	7.0	1.6	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.5	86.2	170.5	2.63	5.6	2.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	27.3	84.8	156.1	2.58	5.7	1.8	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.8	83.1	139.7	2.50	5.9	1.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.8	82.0	130.4	2.45	6.0	1.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.8	80.7	120.3	2.39	6.1	1.5	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.8	79.2	109.7	2.32	6.2	1.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.5	77.1	97.8	2.22	6.3	1.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.6	71.6	120.0	2.24	4.9	1.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.0	70.5	110.1	2.20	5.0	1.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.3	69.2	98.8	2.13	5.1	1.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.7	68.2	92.3	2.09	5.2	1.4	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.1	67.0	85.1	2.03	5.3	1.3	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.7	65.2	78.9	1.97	5.4	1.2	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.4	65.6	77.7	1.97	5.4	1.2	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	13.2	64.5	72.0	1.91	5.4	1.1	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.7	63.8	69.3	1.89	5.5	1.1	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.6	61.8	63.9	1.82	5.5	1.0	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x x 15.3 C	11.12	11.4	62.0	63.2	1.82	5.5	1.0	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.8	61.3	60.2	1.79	5.6	1.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.9	59.4	55.7	1.72	5.6	0.9	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	8.1	56.1	46.4	1.60	5.7	0.8	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	15.5	54.8	67.3	1.76	4.3	1.2	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.7	53.6	60.6	1.71	4.4	1.1	4.92	5.00	3.50	0.625	3.12
5 x 3 1/2 x 1/2 x 13.6 L	13.60	11.5	51.7	52.3	1.62	4.6	1.0	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.4	49.9	47.7	1.56	4.6	1.0	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.4	50.5	47.8	1.57	4.6	0.9	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.3	48.4	43.4	1.50	4.7	0.9	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	9.1	48.8	42.7	1.50	4.7	0.9	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.2	46.9	38.9	1.44	4.7	0.8	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.8	46.6	37.1	1.42	4.8	0.8	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	7.0	44.7	33.8	1.36	4.8	0.8	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.4	43.8	31.1	1.32	4.9	0.7	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.8	41.7	28.2	1.26	4.9	0.7	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.8	42.7	44.8	1.45	3.5	1.1	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	11.2	41.7	40.4	1.40	3.6	1.0	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	10.2	40.3	37.1	1.36	3.6	0.9	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	9.0	38.5	33.4	1.30	3.7	0.9	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.5	40.2	35.2	1.34	3.7	0.9	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.6	38.6	32.1	1.29	3.7	0.8	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.6	39.1	32.1	1.29	3.7	0.8	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.7	37.0	29.0	1.23	3.8	0.8	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.7	37.6	29.3	1.24	3.8	0.8	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.9	35.9	26.5	1.19	3.8	0.7	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.6	37.7	28.7	1.24	3.8	0.8	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.8	36.1	26.2	1.19	3.8	0.7	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	6.1	34.5	23.7	1.14	3.9	0.7	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.5	35.8	25.0	1.17	3.9	0.7	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.9	34.4	23.0	1.13	3.9	0.7	2.25	4.00	3.50	0.312	1.25



PROPERTIES OF COMBINED BEAM AND PLATE
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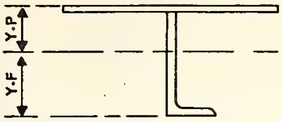
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.3	32.6	20.7	1.07	3.9	0.6	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.3	33.4	21.0	1.09	3.9	0.6	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.8	31.8	19.1	1.04	4.0	0.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.3	30.2	17.3	0.99	4.0	0.6	1.69	4.00	3.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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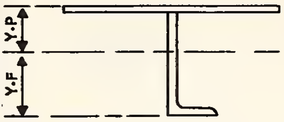
25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	103.8	292.0	1,426.3	6.45	13.7	4.9	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	95.4	289.5	1,335.9	6.41	14.0	4.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	86.7	287.4	1,240.2	6.35	14.3	4.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	82.2	286.6	1,190.1	6.31	14.5	4.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	108.1	250.0	1,179.6	5.52	10.9	4.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	101.8	247.8	1,127.1	5.52	11.1	4.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	98.2	246.7	1,097.7	5.51	11.2	4.5	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	94.8	245.6	1,068.5	5.51	11.3	4.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	91.2	244.6	1,037.6	5.50	11.4	4.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	87.5	243.6	1,005.9	5.48	11.5	4.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	83.8	242.8	973.2	5.47	11.6	4.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	76.1	234.4	897.2	5.28	11.8	3.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	80.0	242.1	939.6	5.45	11.7	3.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	64.0	231.4	783.1	5.16	12.2	3.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	56.3	230.2	706.7	5.06	12.6	3.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	67.4	202.6	689.0	4.65	10.2	3.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	56.8	200.2	603.0	4.56	10.6	3.0	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	51.3	199.6	556.3	4.48	10.8	2.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.8	199.4	525.0	4.43	11.0	2.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	62.5	186.4	591.2	4.31	9.5	3.2	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	57.7	184.5	554.6	4.27	9.6	3.0	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	52.7	184.4	517.8	4.23	9.8	2.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	47.8	178.7	476.0	4.08	10.0	2.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	47.6	183.8	477.6	4.16	10.0	2.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	43.6	177.8	442.1	4.02	10.1	2.5	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	39.0	171.1	400.6	3.85	10.3	2.3	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	41.5	177.5	424.5	3.98	10.2	2.4	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.7	169.5	354.5	3.72	10.5	2.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.9	168.4	311.2	3.58	10.8	1.8	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	44.3	148.3	362.6	3.51	8.2	2.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	37.8	147.0	319.8	3.42	8.5	2.2	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.2	143.2	279.2	3.27	8.7	2.0	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.3	146.4	288.5	3.34	8.7	2.0	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.1	140.7	256.5	3.18	8.8	1.8	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.1	142.6	256.9	3.20	8.8	1.8	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.0	139.9	233.1	3.09	9.0	1.7	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	49.1	138.1	348.8	3.33	7.1	2.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	44.7	136.2	323.7	3.28	7.2	2.4	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	39.7	133.8	294.5	3.20	7.4	2.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	34.3	130.9	261.8	3.10	7.6	2.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.6	129.1	244.2	3.03	7.7	1.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.6	127.0	224.4	2.95	7.9	1.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	54.8	128.8	331.7	3.19	6.0	2.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	49.7	127.1	308.0	3.15	6.2	2.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	41.3	120.0	265.1	2.95	6.4	2.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	44.3	125.2	282.0	3.09	6.4	2.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	37.6	118.5	246.4	2.90	6.5	2.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.6	116.5	225.0	2.84	6.7	1.9	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	38.2	122.6	251.2	3.00	6.6	2.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.0	121.0	234.1	2.94	6.7	1.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.1	113.8	199.7	2.74	6.9	1.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.7	119.2	216.2	2.87	6.8	1.8	6.75	8.00	6.00	0.500	4.00

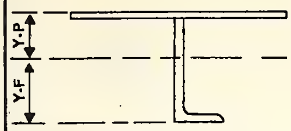


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.7	112.3	186.2	2.68	7.0	1.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.2	116.9	196.2	2.78	6.9	1.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.2	110.3	171.2	2.60	7.1	1.6	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.6	108.0	155.5	2.51	7.2	1.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	31.2	101.1	181.8	2.53	5.8	1.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	27.8	99.3	165.7	2.47	6.0	1.7	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.2	97.0	147.6	2.38	6.1	1.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.2	95.5	137.4	2.33	6.2	1.4	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.1	93.7	126.4	2.26	6.3	1.3	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.0	91.6	114.9	2.18	6.4	1.3	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.8	88.8	102.0	2.08	6.5	1.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.1	83.7	127.9	2.16	5.1	1.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.5	82.2	116.9	2.10	5.2	1.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.6	80.3	104.4	2.03	5.3	1.3	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.0	78.9	97.2	1.98	5.4	1.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.4	77.2	89.4	1.92	5.5	1.2	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.7	75.3	81.4	1.85	5.5	1.1	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	12.9	72.8	72.4	1.77	5.6	1.0	3.61	6.00	4.00	0.375	2.25



STEEL

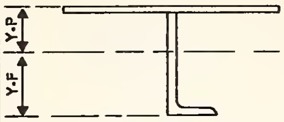
PROPERTIES OF COMBINED BEAM AND PLATE

[-L AND L

50t

28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FODT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	105.9	340.3	1,509.9	6.27	14.3	4.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	97.1	337.9	1,409.8	6.20	14.5	4.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	88.1	335.9	1,304.2	6.11	14.8	3.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	83.5	335.1	1,249.0	6.05	15.0	3.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	110.9	290.1	1,258.3	5.42	11.4	4.3	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	104.1	287.9	1,199.8	5.40	11.5	4.2	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	100.5	286.8	1,167.1	5.39	11.6	4.1	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	96.8	285.7	1,134.6	5.37	11.7	4.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	93.0	284.7	1,100.2	5.35	11.8	3.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	89.2	283.8	1,064.9	5.32	11.9	3.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	85.3	282.9	1,028.6	5.29	12.1	3.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	77.5	273.1	947.4	5.11	12.2	3.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	81.4	282.2	991.3	5.26	12.2	3.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	65.0	269.7	821.6	4.95	12.6	3.0	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	57.0	268.3	737.9	4.82	12.9	2.8	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	68.7	235.8	728.3	4.50	10.6	3.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	57.7	233.2	633.2	4.37	11.0	2.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	52.0	232.3	581.9	4.28	11.2	2.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	48.3	231.9	547.5	4.21	11.3	2.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	63.8	216.7	625.2	4.17	9.8	2.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	58.7	214.6	584.9	4.11	10.0	2.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	53.6	214.4	543.9	4.05	10.2	2.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	48.6	207.5	499.4	3.91	10.3	2.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	48.3	213.6	499.7	3.97	10.3	2.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	44.2	206.3	462.2	3.83	10.4	2.2	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	39.5	198.2	418.3	3.67	10.6	2.1	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	42.0	205.7	443.0	3.78	10.5	2.2	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.1	195.8	368.4	3.52	10.8	1.9	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.2	193.6	321.8	3.36	11.0	1.7	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	45.2	171.9	382.2	3.37	8.5	2.2	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.4	170.1	335.0	3.26	8.7	2.0	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.6	165.0	291.2	3.10	8.9	1.8	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.8	168.9	300.7	3.16	8.9	1.8	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.5	161.8	266.9	3.01	9.0	1.6	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.5	163.9	267.0	3.02	9.1	1.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.3	160.3	241.6	2.91	9.2	1.5	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	50.1	160.1	369.9	3.22	7.4	2.3	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	45.5	157.8	342.2	3.16	7.5	2.2	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	40.4	154.8	310.1	3.07	7.7	2.0	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	34.9	151.0	274.5	2.96	7.9	1.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	32.0	148.8	255.4	2.89	8.0	1.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.0	145.9	234.1	2.80	8.1	1.6	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	55.9	149.7	353.8	3.11	6.3	2.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	50.6	147.7	327.4	3.05	6.5	2.2	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	42.2	138.8	281.0	2.85	6.7	2.0	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	45.0	145.3	298.5	2.98	6.6	2.1	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	38.4	136.9	260.3	2.79	6.8	1.9	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	34.2	134.4	236.8	2.72	6.9	1.8	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	38.8	141.9	264.6	2.87	6.8	1.9	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.5	139.8	245.9	2.81	6.9	1.8	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.5	130.8	209.3	2.61	7.1	1.6	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.2	137.4	226.4	2.73	7.0	1.6	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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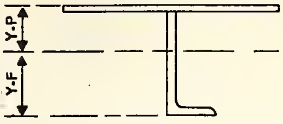
28.05# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	27.1	128.8	194.7	2.54	7.2	1.5	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.6	134.3	204.9	2.63	7.2	1.5	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.6	126.1	178.6	2.46	7.3	1.4	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.9	123.0	161.8	2.37	7.4	1.3	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	31.8	116.4	192.0	2.43	6.0	1.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.3	114.0	174.4	2.36	6.2	1.5	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.6	111.0	154.7	2.27	6.3	1.4	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.6	108.9	143.6	2.21	6.4	1.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.4	106.5	131.8	2.14	6.4	1.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.3	103.6	119.5	2.06	6.5	1.2	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	16.0	99.8	105.8	1.96	6.6	1.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.6	95.9	135.1	2.07	5.3	1.4	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.9	93.8	123.0	2.00	5.4	1.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.9	91.2	109.4	1.93	5.5	1.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.3	89.3	101.7	1.87	5.5	1.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.6	87.1	93.3	1.81	5.6	1.1	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.9	84.5	84.7	1.74	5.7	1.0	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	13.1	81.1	75.2	1.66	5.8	0.9	3.61	6.00	4.00	0.375	2.25



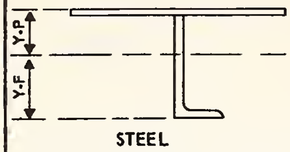
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

50t

30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	107.7	390.8	1,583.6	6.08	14.7	4.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	98.6	388.2	1,474.5	5.99	15.0	3.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	89.3	386.0	1,359.6	5.87	15.2	3.5	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	84.5	385.1	1,299.7	5.81	15.4	3.4	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	113.2	332.0	1,329.4	5.30	11.7	4.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	106.2	329.7	1,265.0	5.27	11.9	3.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	102.3	328.6	1,229.1	5.24	12.0	3.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	98.6	327.5	1,193.4	5.22	12.1	3.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	94.6	326.4	1,155.6	5.19	12.2	3.5	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	90.7	325.4	1,116.9	5.15	12.3	3.4	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	86.7	324.5	1,077.1	5.11	12.4	3.3	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	78.8	312.9	991.5	4.93	12.6	3.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	82.6	323.7	1,036.4	5.07	12.5	3.2	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	65.9	308.9	854.9	4.75	13.0	2.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	57.7	306.8	764.6	4.59	13.3	2.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	69.8	269.9	762.8	4.34	10.9	2.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	58.5	266.5	659.3	4.18	11.3	2.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	52.6	265.2	603.9	4.08	11.5	2.3	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	48.8	264.4	566.8	4.00	11.6	2.1	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	64.8	247.7	655.1	4.03	10.1	2.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	59.6	245.2	611.3	3.96	10.3	2.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	54.3	244.6	566.6	3.88	10.4	2.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	49.2	236.5	519.6	3.74	10.6	2.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	48.9	243.3	518.7	3.79	10.6	2.1	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	44.8	234.7	479.5	3.65	10.7	2.0	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	40.1	225.1	433.6	3.49	10.8	1.9	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	42.5	233.8	458.9	3.60	10.8	2.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.5	221.4	380.2	3.34	11.0	1.7	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.5	217.8	330.9	3.17	11.2	1.5	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	45.9	195.6	399.4	3.24	8.7	2.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.9	192.9	348.2	3.11	8.9	1.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.0	186.3	301.6	2.95	9.1	1.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.1	190.8	311.3	3.00	9.1	1.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.9	182.1	275.8	2.85	9.2	1.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.8	184.4	275.8	2.86	9.3	1.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.6	179.7	248.9	2.75	9.4	1.4	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	51.0	182.3	388.6	3.11	7.6	2.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	46.3	179.5	358.6	3.04	7.8	2.0	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	41.0	175.6	323.9	2.95	7.9	1.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	35.4	170.8	285.6	2.82	8.1	1.7	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	32.5	167.9	265.2	2.75	8.2	1.6	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.3	164.2	242.6	2.66	8.3	1.5	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	56.9	171.0	373.5	3.01	6.6	2.2	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	51.4	168.4	344.6	2.95	6.7	2.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	42.9	157.6	295.1	2.75	6.9	1.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	45.7	165.3	313.1	2.87	6.9	1.9	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	39.0	155.2	272.7	2.68	7.0	1.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	34.7	152.0	247.3	2.60	7.1	1.6	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	39.3	161.0	276.3	2.75	7.0	1.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.9	158.2	256.3	2.68	7.1	1.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.9	147.3	217.7	2.49	7.3	1.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.6	155.1	235.4	2.60	7.2	1.5	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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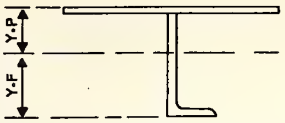
30.6# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 9/16 x 21.9 L	21.86	27.5	144.6	202.1	2.42	7.4	1.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.9	151.0	212.4	2.50	7.3	1.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.9	141.1	185.0	2.34	7.4	1.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.2	137.1	167.3	2.25	7.5	1.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	32.3	131.3	201.1	2.33	6.2	1.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.8	128.2	182.0	2.25	6.3	1.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.9	124.2	160.9	2.16	6.5	1.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.9	121.6	149.2	2.09	6.5	1.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.7	118.4	136.6	2.02	6.6	1.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.5	114.6	123.6	1.94	6.7	1.1	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	16.2	109.8	109.3	1.84	6.8	1.0	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	26.0	107.6	141.6	1.98	5.4	1.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	23.3	104.9	128.5	1.91	5.5	1.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.3	101.4	114.0	1.83	5.6	1.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.6	99.0	105.7	1.78	5.7	1.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.9	96.0	96.9	1.72	5.7	1.0	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.1	92.7	87.8	1.65	5.8	0.9	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	13.2	88.4	77.7	1.57	5.9	0.9	3.61	6.00	4.00	0.375	2.25

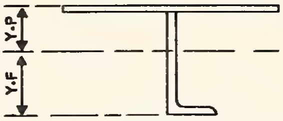


STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	110.7	498.8	1,710.0	5.68	15.4	3.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	101.1	495.2	1,584.2	5.56	15.7	3.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	91.2	491.8	1,452.7	5.41	15.9	3.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	86.3	490.1	1,384.6	5.33	16.1	2.8	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	117.1	422.3	1,455.0	5.03	12.4	3.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	109.6	419.5	1,379.2	4.97	12.6	3.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	105.5	418.0	1,337.1	4.94	12.7	3.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	101.5	416.5	1,295.4	4.90	12.8	3.1	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	97.3	415.0	1,251.3	4.85	12.9	3.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	93.1	413.6	1,206.3	4.81	13.0	2.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	88.8	412.1	1,160.2	4.75	13.1	2.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	80.9	396.7	1,066.8	4.58	13.2	2.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	84.6	410.7	1,113.1	4.70	13.2	2.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	67.3	389.6	911.0	4.35	13.5	2.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	58.8	385.0	809.2	4.18	13.8	2.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	71.7	340.8	822.2	4.03	11.5	2.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	59.8	334.6	703.6	3.84	11.8	2.1	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	53.7	331.3	640.8	3.72	11.9	1.9	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	49.7	329.0	599.2	3.63	12.1	1.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	66.6	311.9	706.7	3.74	10.6	2.3	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	61.1	307.9	656.7	3.65	10.7	2.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	55.5	305.9	605.2	3.56	10.9	2.0	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	50.4	294.7	554.1	3.42	11.0	1.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	49.8	302.6	550.9	3.45	11.1	1.8	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	45.7	291.0	509.0	3.32	11.1	1.7	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	41.0	277.7	459.5	3.17	11.2	1.7	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	43.4	289.0	485.8	3.27	11.2	1.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	35.1	270.4	400.4	3.01	11.4	1.5	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.0	262.6	346.4	2.84	11.6	1.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	47.1	243.0	429.1	2.98	9.1	1.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	39.8	237.3	370.8	2.84	9.3	1.6	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.8	226.8	319.5	2.67	9.5	1.4	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.8	232.5	329.5	2.72	9.5	1.4	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	30.5	220.2	291.3	2.57	9.6	1.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	30.4	222.6	290.8	2.57	9.6	1.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.1	215.0	261.7	2.46	9.7	1.2	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	52.6	227.3	421.5	2.90	8.0	1.9	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	47.6	222.8	387.1	2.81	8.1	1.7	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	42.1	216.8	347.8	2.71	8.3	1.6	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	36.2	209.0	304.9	2.57	8.4	1.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	33.2	204.3	282.3	2.50	8.5	1.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.0	198.4	257.4	2.40	8.6	1.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	58.6	214.4	408.3	2.82	7.0	1.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	52.8	210.3	374.7	2.74	7.1	1.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	44.2	195.1	320.1	2.55	7.2	1.6	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	46.8	205.2	338.4	2.65	7.2	1.6	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	40.1	191.2	294.3	2.48	7.3	1.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	35.7	185.9	265.6	2.38	7.4	1.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	40.2	198.1	296.8	2.52	7.4	1.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	36.8	193.6	274.3	2.45	7.5	1.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	30.7	178.4	232.5	2.26	7.6	1.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	33.3	188.5	251.1	2.36	7.5	1.3	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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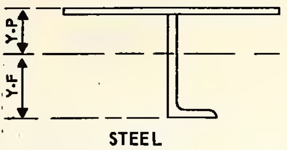
35.7# PLATE WEIGHT

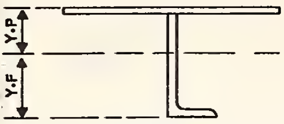
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	28.2	174.1	215.3	2.19	7.6	1.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	29.6	181.9	225.7	2.26	7.6	1.2	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.5	168.5	196.5	2.11	7.7	1.2	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.8	162.1	177.1	2.02	7.8	1.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	33.3	160.2	217.2	2.15	6.5	1.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	29.6	155.1	195.7	2.06	6.6	1.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	25.6	148.6	172.1	1.96	6.7	1.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.5	144.4	159.2	1.90	6.8	1.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	21.3	139.4	145.4	1.83	6.8	1.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.0	133.7	131.2	1.75	6.9	1.0	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	26.9	129.6	153.2	1.82	5.7	1.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	24.0	125.2	138.5	1.75	5.8	1.1	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.9	119.6	122.3	1.66	5.9	1.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	19.2	115.8	113.2	1.61	5.9	1.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.4	111.4	103.4	1.55	5.9	0.9	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.6	106.4	93.5	1.48	6.0	0.9	4.18	6.00	4.00	0.437	2.62



PROPERTIES OF COMBINED BEAM AND PLATE
⊏-L AND L

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	113.0	611.8	1,812.9	5.29	16.0	3.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	103.0	605.9	1,672.8	5.15	16.2	2.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	92.8	599.7	1,527.2	4.99	16.5	2.5	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	87.7	596.4	1,452.2	4.90	16.6	2.4	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	120.2	517.5	1,560.4	4.75	13.0	3.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	112.3	513.5	1,474.4	4.67	13.1	2.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	108.0	511.2	1,426.7	4.63	13.2	2.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	103.8	508.9	1,379.6	4.58	13.3	2.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	99.4	506.5	1,330.0	4.53	13.4	2.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	95.1	504.1	1,279.6	4.47	13.5	2.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	90.6	501.5	1,228.0	4.41	13.6	2.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	82.6	481.5	1,128.3	4.24	13.7	2.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	86.2	498.9	1,175.5	4.35	13.6	2.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	68.5	469.1	956.4	4.00	14.0	2.0	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	59.7	460.0	845.2	3.81	14.2	1.8	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	73.3	411.6	871.1	3.74	11.9	2.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	60.9	400.5	739.9	3.53	12.2	1.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	54.6	393.8	671.0	3.40	12.3	1.7	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	50.5	389.0	625.7	3.31	12.4	1.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	68.1	375.5	749.5	3.47	11.0	2.0	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	62.4	369.2	694.2	3.38	11.1	1.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	56.6	364.6	637.0	3.27	11.3	1.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	51.4	349.8	582.6	3.14	11.3	1.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	50.7	358.1	577.4	3.15	11.4	1.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	46.6	343.1	533.3	3.04	11.4	1.6	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	41.8	325.8	481.2	2.89	11.5	1.5	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	44.2	339.4	508.1	2.98	11.5	1.5	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	35.8	313.4	417.4	2.73	11.7	1.3	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.5	300.1	359.6	2.56	11.8	1.2	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	48.2	287.7	454.2	2.75	9.4	1.6	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	40.6	277.5	390.0	2.60	9.6	1.4	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	34.4	262.2	334.8	2.43	9.7	1.3	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	35.5	268.9	345.0	2.47	9.7	1.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	31.1	252.6	304.7	2.34	9.8	1.2	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	31.0	254.9	303.8	2.34	9.8	1.2	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.6	243.9	272.9	2.23	9.9	1.1	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	53.9	270.6	449.6	2.69	8.3	1.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	48.7	263.8	411.3	2.61	8.4	1.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	43.0	254.7	368.2	2.49	8.6	1.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	37.0	243.1	321.5	2.36	8.7	1.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	34.0	236.2	297.0	2.28	8.7	1.3	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.7	227.5	270.2	2.19	8.8	1.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	60.1	256.6	438.1	2.64	7.3	1.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	54.1	250.3	400.4	2.55	7.4	1.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	45.4	230.4	341.6	2.37	7.5	1.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	47.9	242.5	360.1	2.45	7.5	1.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	41.2	224.3	313.1	2.29	7.6	1.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	36.6	216.3	281.5	2.19	7.7	1.3	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	41.1	231.7	314.4	2.32	7.6	1.4	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	37.6	225.1	289.9	2.24	7.7	1.3	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	31.5	205.3	245.6	2.07	7.8	1.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	34.0	217.5	264.7	2.16	7.8	1.2	6.75	8.00	6.00	0.500	4.00



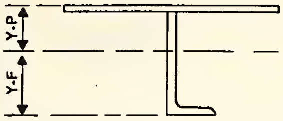
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

50t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FDDT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	28.9	199.0	226.9	2.01	7.9	1.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	30.2	208.0	237.4	2.06	7.9	1.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	26.1	191.1	206.7	1.93	7.9	1.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	23.3	182.2	186.0	1.84	8.0	1.0	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	34.3	185.9	231.5	1.98	6.8	1.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	30.4	178.5	207.9	1.90	6.8	1.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	26.3	169.1	182.3	1.80	6.9	1.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	24.1	1163.1	168.3	1.74	7.0	1.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	21.9	156.2	153.5	1.67	7.0	1.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.6	148.4	138.3	1.59	7.1	0.9	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	27.8	148.6	163.9	1.68	5.9	1.1	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	24.8	142.2	147.7	1.61	6.0	1.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	21.6	134.2	130.1	1.53	6.0	1.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	19.8	129.1	120.2	1.47	6.1	0.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	18.0	123.2	109.8	1.42	6.1	0.9	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	16.1	116.6	99.2	1.35	6.1	0.9	4.18	6.00	4.00	0.437	2.62



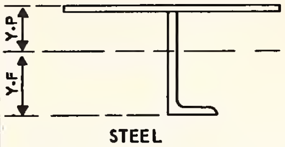
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

50t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	115.0	724.8	1,898.4	4.93	16.5	2.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	104.7	715.3	1,746.1	4.79	16.7	2.4	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	94.2	704.6	1,588.7	4.62	16.9	2.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	88.9	698.7	1,507.9	4.52	17.0	2.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	122.8	613.9	1,650.0	4.48	13.4	2.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	114.6	607.8	1,554.9	4.39	13.6	2.6	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	110.2	604.3	1,502.4	4.34	13.6	2.5	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	105.8	600.7	1,450.6	4.29	13.7	2.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	101.3	596.8	1,396.3	4.23	13.8	2.3	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	96.7	592.8	1,341.1	4.17	13.9	2.3	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	92.2	588.5	1,284.9	4.10	13.9	2.2	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	84.1	563.4	1,180.1	3.94	14.0	2.1	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	87.6	583.9	1,227.8	4.04	14.0	2.1	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	69.6	543.3	994.5	3.69	14.3	1.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	60.5	527.9	875.6	3.50	14.5	1.7	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	74.7	479.0	912.7	3.47	12.2	1.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	61.9	460.8	770.8	3.25	12.5	1.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	55.4	449.6	696.9	3.12	12.6	1.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	51.2	441.5	648.6	3.03	12.7	1.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	69.5	435.3	786.3	3.23	11.3	1.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	63.6	426.0	726.5	3.13	11.4	1.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	57.6	417.8	664.5	3.02	11.5	1.6	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	52.3	399.0	607.3	2.90	11.6	1.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	51.5	407.0	600.5	2.90	11.6	1.5	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	47.4	388.6	554.6	2.79	11.7	1.4	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	42.5	367.0	500.2	2.66	11.8	1.4	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	44.9	382.8	527.8	2.74	11.7	1.4	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	36.4	348.7	432.7	2.50	11.9	1.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.0	329.2	371.8	2.34	12.0	1.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	49.3	327.5	476.4	2.55	9.7	1.5	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	41.5	311.8	407.2	2.39	9.8	1.3	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	35.1	291.2	348.8	2.24	9.9	1.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	36.2	298.7	359.1	2.27	9.9	1.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	31.8	278.5	317.1	2.14	10.0	1.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	31.6	280.4	315.9	2.14	10.0	1.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	28.2	266.0	283.5	2.04	10.1	1.1	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	55.2	310.2	474.4	2.51	8.6	1.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	49.9	300.5	432.9	2.42	8.7	1.4	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	44.0	287.8	386.5	2.31	8.8	1.3	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	37.9	271.9	336.6	2.18	8.9	1.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	34.7	262.4	310.6	2.10	8.9	1.2	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	31.4	250.9	282.2	2.02	9.0	1.1	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	61.5	295.7	464.4	2.47	7.6	1.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	55.3	286.6	423.2	2.38	7.6	1.5	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	46.6	261.8	361.0	2.21	7.7	1.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	49.0	275.5	379.6	2.28	7.7	1.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	42.2	253.1	330.1	2.13	7.8	1.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	37.5	242.1	296.1	2.03	7.9	1.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	42.0	260.6	330.4	2.15	7.9	1.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	38.4	251.4	304.2	2.07	7.9	1.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	32.3	227.4	257.8	1.91	8.0	1.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	34.8	241.2	277.4	1.99	8.0	1.1	6.75	8.00	6.00	0.500	4.00

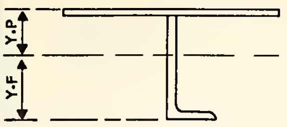


PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

50t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	29.6	218.9	237.9	1.85	8.0	1.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	30.9	228.7	248.4	1.90	8.0	1.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	26.8	208.7	216.6	1.77	8.1	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	23.9	197.3	194.7	1.69	8.1	1.0	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	35.2	207.8	244.8	1.84	6.9	1.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	31.3	197.7	219.5	1.76	7.0	1.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	27.1	185.3	192.1	1.66	7.1	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	24.9	177.7	177.2	1.60	7.1	1.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	22.5	168.9	161.6	1.54	7.2	1.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	20.2	159.2	145.6	1.46	7.2	0.9	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	28.7	164.3	174.2	1.56	6.1	1.1	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	25.6	155.9	156.8	1.49	6.1	1.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	22.3	145.7	137.9	1.41	6.2	0.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	20.5	139.3	127.5	1.36	6.2	0.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	18.7	132.0	116.4	1.31	6.2	0.9	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	16.8	124.1	105.2	1.25	6.3	0.8	4.18	6.00	4.00	0.437	2.62



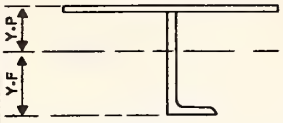
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

50t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	116.8	834.7	1,971.7	4.61	16.9	2.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	106.1	820.0	1,808.9	4.46	17.0	2.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	95.4	803.3	1,641.5	4.29	17.2	2.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	90.0	793.9	1,556.0	4.19	17.3	2.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	125.1	709.0	1,728.0	4.22	13.8	2.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	116.7	699.9	1,625.0	4.12	13.9	2.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	112.1	694.7	1,568.2	4.07	14.0	2.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	107.6	689.3	1,512.3	4.01	14.1	2.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	102.9	683.3	1,453.8	3.95	14.1	2.1	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	98.3	677.1	1,394.6	3.89	14.2	2.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	93.6	670.4	1,334.4	3.83	14.3	2.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	85.5	640.0	1,225.3	3.67	14.3	1.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	88.9	663.3	1,273.4	3.76	14.3	1.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	70.6	610.0	1,028.2	3.42	14.6	1.7	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	61.4	587.0	902.8	3.24	14.7	1.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	76.0	540.9	949.6	3.24	12.5	1.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	62.9	514.0	798.5	3.02	12.7	1.6	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	56.3	497.5	720.4	2.89	12.8	1.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	52.0	485.6	669.5	2.80	12.9	1.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	70.8	489.8	819.2	3.01	11.6	1.7	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	64.8	476.7	755.5	2.91	11.7	1.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	58.6	464.2	689.4	2.81	11.8	1.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	53.3	441.4	630.0	2.69	11.8	1.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	52.4	448.5	621.6	2.69	11.9	1.4	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	48.2	426.7	574.3	2.58	11.9	1.3	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	43.3	401.1	518.1	2.46	12.0	1.3	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	45.7	418.6	546.1	2.53	11.9	1.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	37.1	376.6	447.3	2.31	12.1	1.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.6	350.9	383.8	2.15	12.2	1.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	42.3	340.1	423.5	2.22	10.0	1.2	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	36.1	305.1	363.3	2.06	10.1	1.2	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	36.9	322.3	372.8	2.10	10.1	1.2	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	30.8	283.6	312.8	1.93	10.1	1.1	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	32.3	299.9	327.8	1.98	10.2	1.1	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	28.8	282.3	294.1	1.88	10.2	1.0	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	25.5	257.8	260.9	1.77	10.2	1.0	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	45.0	315.7	403.9	2.15	9.0	1.3	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	38.8	295.3	351.2	2.02	9.1	1.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	35.6	283.4	323.9	1.95	9.1	1.1	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	32.1	269.2	294.2	1.87	9.2	1.1	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	62.9	330.9	488.9	2.32	7.8	1.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	56.6	318.6	444.6	2.23	7.9	1.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	47.8	289.0	379.5	2.06	7.9	1.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	50.1	303.9	397.9	2.13	7.9	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	43.3	277.6	346.4	1.99	8.0	1.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	38.5	263.4	310.4	1.89	8.1	1.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	43.0	284.5	345.7	2.00	8.0	1.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	39.3	272.9	318.1	1.93	8.1	1.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	33.1	245.0	269.9	1.78	8.1	1.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	35.6	260.1	289.9	1.85	8.1	1.1	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	30.4	234.5	249.1	1.72	8.2	1.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	31.7	244.7	259.5	1.76	8.2	1.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	27.5	222.2	226.7	1.64	8.2	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	24.6	208.6	203.9	1.57	8.3	1.0	5.06	8.00	4.00	0.437	3.50



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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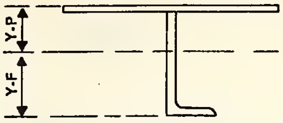
51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	36.3	226.0	258.0	1.72	7.1	1.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	32.3	213.4	231.1	1.64	7.2	1.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	28.0	198.1	202.2	1.55	7.2	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	25.7	188.9	186.6	1.49	7.3	1.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	23.3	178.6	170.1	1.43	7.3	1.0	5.25	7.00	4.00	0.500	3.50



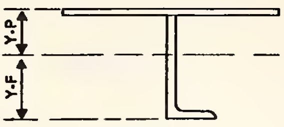
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

50t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	118.4	937.0	2,035.9	4.32	17.2	2.2	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	107.5	916.0	1,864.2	4.16	17.3	2.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	96.6	891.8	1,688.2	4.00	17.5	1.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	91.1	878.3	1,598.6	3.90	17.6	1.8	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	127.2	799.1	1,797.2	3.98	14.1	2.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	118.6	786.3	1,687.1	3.88	14.2	2.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	113.9	778.8	1,626.6	3.83	14.3	2.1	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	109.3	771.1	1,567.2	3.77	14.3	2.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	104.5	762.7	1,505.1	3.71	14.4	2.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	99.7	753.8	1,442.4	3.65	14.5	1.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	94.9	744.2	1,378.7	3.58	14.5	1.9	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	86.8	708.3	1,266.0	3.44	14.6	1.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	90.1	734.0	1,314.4	3.51	14.6	1.8	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	71.6	667.1	1,059.1	3.19	14.8	1.6	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	62.2	635.8	928.1	3.01	14.9	1.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	77.3	595.2	983.4	3.03	12.7	1.7	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	63.9	558.7	824.4	2.82	12.9	1.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	57.2	536.5	742.7	2.69	13.0	1.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	52.8	520.6	689.5	2.60	13.1	1.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	72.0	537.3	849.7	2.82	11.8	1.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	65.9	520.1	782.5	2.72	11.9	1.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	59.6	502.8	712.9	2.62	12.0	1.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	54.3	476.3	651.6	2.51	12.0	1.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	53.3	481.9	641.9	2.50	12.0	1.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	49.1	457.2	593.4	2.41	12.1	1.3	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	44.2	427.8	535.6	2.29	12.1	1.3	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	46.6	446.8	563.9	2.35	12.1	1.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	37.8	397.4	462.0	2.14	12.2	1.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	32.2	366.1	396.1	2.00	12.3	1.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	43.3	362.4	439.7	2.07	10.2	1.2	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	37.0	323.9	378.1	1.92	10.2	1.2	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	37.8	340.1	386.7	1.96	10.2	1.1	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	31.6	298.0	325.4	1.80	10.3	1.1	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	33.1	314.3	340.2	1.84	10.3	1.1	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	29.5	294.0	305.3	1.75	10.3	1.0	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	26.2	267.8	271.5	1.65	10.4	1.0	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	46.1	338.5	421.0	2.02	9.1	1.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	39.7	313.8	365.9	1.89	9.2	1.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	36.5	299.7	337.4	1.82	9.2	1.1	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	33.0	283.0	306.5	1.74	9.3	1.1	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	64.4	361.3	512.3	2.18	8.0	1.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	57.9	345.7	465.3	2.10	8.0	1.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	49.1	311.8	397.6	1.94	8.1	1.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	51.3	327.4	416.0	2.00	8.1	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	44.5	297.7	362.7	1.87	8.2	1.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	39.5	280.5	324.8	1.78	8.2	1.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	44.1	303.8	361.1	1.87	8.2	1.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	40.4	289.9	332.2	1.80	8.2	1.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	34.1	258.8	282.5	1.67	8.3	1.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	36.6	274.7	302.7	1.73	8.3	1.1	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	31.3	246.6	260.7	1.61	8.3	1.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	32.6	256.8	271.2	1.64	8.3	1.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	28.4	232.4	237.5	1.54	8.4	1.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	25.5	217.0	213.8	1.47	8.4	1.0	5.06	8.00	4.00	0.437	3.50



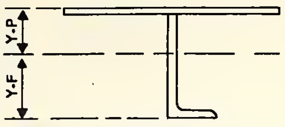
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

50t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	37.5	240.8	271.6	1.62	7.2	1.1	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	33.3	225.9	243.3	1.54	7.3	1.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	29.0	208.2	213.0	1.45	7.4	1.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	26.6	197.8	196.7	1.40	7.4	1.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	24.2	186.2	179.6	1.34	7.4	1.0	5.25	7.00	4.00	0.500	3.50

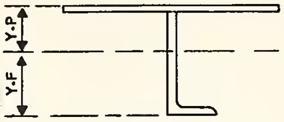


PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

50t

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	119.9	1,030.4	2,094.2	4.06	17.5	2.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	108.9	1,002.0	1,914.7	3.91	17.6	1.9	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	97.7	969.4	1,731.3	3.74	17.7	1.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	92.1	951.3	1,638.2	3.65	17.8	1.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	129.2	882.9	1,860.3	3.76	14.4	2.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	120.4	865.7	1,744.0	3.66	14.5	2.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	115.6	855.6	1,680.2	3.61	14.5	2.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	110.9	845.3	1,617.7	3.55	14.6	1.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	106.1	834.0	1,552.5	3.49	14.6	1.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	101.2	822.1	1,486.6	3.43	14.7	1.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	96.3	809.3	1,419.9	3.36	14.7	1.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	88.1	768.1	1,304.2	3.23	14.8	1.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	91.4	795.7	1,352.6	3.29	14.8	1.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	72.7	714.9	1,088.5	2.98	15.0	1.5	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	78.6	642.1	1,015.6	2.85	12.9	1.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	65.0	595.5	849.7	2.64	13.1	1.4	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	73.4	577.9	879.0	2.65	12.0	1.5	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	67.1	556.5	808.9	2.56	12.0	1.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	60.7	534.4	736.1	2.46	12.1	1.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	55.3	504.4	673.1	2.35	12.2	1.3	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	52.6	413.6	537.0	2.09	10.2	1.3	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	59.2	400.5	541.7	2.09	9.1	1.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	53.5	381.1	492.7	2.00	9.2	1.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	47.3	357.0	438.7	1.90	9.3	1.2	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	66.0	387.5	535.5	2.07	8.1	1.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	59.4	368.7	486.1	1.98	8.2	1.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	50.5	331.0	416.3	1.84	8.2	1.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	52.7	346.8	434.4	1.88	8.2	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	45.8	314.4	379.7	1.76	8.3	1.2	9.73	8.00	4.00	0.875	7.00



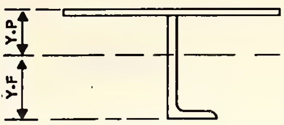
PROPERTIES OF COMBINED BEAM AND PLATE

C-L AND L

50t

71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	123.0	1,184.2	2,200.2	3.62	17.9	1.9	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	111.6	1,139.6	2,007.8	3.48	18.0	1.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	100.2	1,089.4	1,812.2	3.32	18.1	1.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	94.5	1,061.7	1,713.1	3.24	18.1	1.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	133.3	1,025.7	1,975.4	3.39	14.8	1.9	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	124.1	998.6	1,848.6	3.29	14.9	1.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	119.1	982.8	1,779.3	3.24	14.9	1.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	114.3	966.8	1,711.5	3.18	15.0	1.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	109.2	949.3	1,641.0	3.13	15.0	1.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	104.2	930.9	1,569.9	3.07	15.1	1.7	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	99.2	911.4	1,498.1	3.00	15.1	1.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	90.9	860.7	1,377.3	2.88	15.1	1.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	94.1	890.8	1,425.9	2.94	15.1	1.6	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	75.0	784.3	1,147.1	2.65	15.3	1.5	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	81.5	713.7	1,079.0	2.55	13.2	1.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	67.5	648.3	901.2	2.35	13.4	1.4	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	76.3	639.6	937.6	2.38	12.3	1.5	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	69.9	610.5	862.4	2.29	12.3	1.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	63.3	579.6	784.2	2.20	12.4	1.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	57.8	544.2	718.4	2.10	12.4	1.3	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	55.5	448.2	580.1	1.89	10.5	1.3	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	62.5	439.6	588.3	1.89	9.4	1.3	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	56.6	414.7	535.5	1.81	9.5	1.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	50.2	384.8	477.5	1.72	9.5	1.2	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	69.7	428.9	584.2	1.88	8.4	1.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	62.9	404.4	530.5	1.80	8.4	1.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	53.9	361.1	456.9	1.67	8.5	1.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	55.9	376.8	474.7	1.71	8.5	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	49.0	340.4	417.4	1.60	8.5	1.2	9.73	8.00	4.00	0.875	7.00



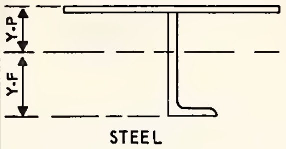
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

50t

81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	126.3	1,295.3	2,301.9	3.27	18.2	1.8	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	114.7	1,235.2	2,098.9	3.14	18.3	1.7	13.01	18.00	4.10	0.625	10.80
15 x 4 x 75.0 C	64.99	137.5	1,135.2	2,085.3	3.08	15.2	1.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	128.1	1,097.9	1,949.8	2.99	15.2	1.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	122.9	1,076.5	1,875.9	2.94	15.3	1.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	118.0	1,054.9	1,803.8	2.89	15.3	1.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	112.8	1,031.5	1,728.8	2.84	15.3	1.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	107.7	1,007.1	1,653.5	2.78	15.4	1.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	102.5	981.5	1,577.5	2.72	15.4	1.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	94.2	923.6	1,452.5	2.61	15.4	1.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	97.3	954.6	1,501.1	2.66	15.4	1.6	12.16	15.00	4.00	0.797	9.37
13 x 4 x 50.0 C	41.96	84.9	762.5	1,146.4	2.32	13.5	1.5	12.34	13.00	4.41	0.610	10.23
12 x 4 x 50.0 C	41.60	79.9	682.2	1,001.1	2.17	12.5	1.5	12.24	12.00	4.13	0.700	10.02
9 x 4 x 1 x 40.8 L	40.80	66.6	469.3	642.0	1.74	9.6	1.4	12.00	9.00	4.00	1.000	9.00
8 x 6 x 1 x 44.2 L	44.20	74.3	461.0	639.7	1.73	8.6	1.4	13.00	8.00	6.00	1.000	8.00

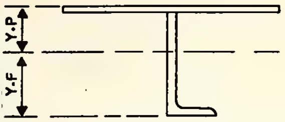


PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

40t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 4 x 1 x 40.8 L	40.80	26.8	33.4	136.5	3.19	4.1	5.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	24.9	30.8	126.5	3.24	4.1	5.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	23.0	27.8	115.6	3.30	4.2	5.0	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	21.1	24.5	104.2	3.38	4.2	4.9	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	20.1	22.8	98.1	3.42	4.3	4.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	19.1	21.0	91.7	3.46	4.4	4.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	23.7	37.2	118.6	2.87	3.2	5.0	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	22.1	34.3	110.1	2.92	3.2	5.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	22.2	28.0	101.4	2.86	3.6	4.6	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	20.5	31.2	101.3	2.99	3.2	4.9	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	20.8	25.9	94.5	2.91	3.6	4.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	19.3	23.6	86.9	2.97	3.7	4.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	18.8	27.6	91.6	3.06	3.3	4.9	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	18.0	25.6	86.5	3.11	3.4	4.8	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	17.8	20.8	78.6	3.04	3.8	4.4	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	17.1	23.6	81.2	3.15	3.4	4.7	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	17.0	19.5	74.3	3.08	3.8	4.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	16.2	21.4	75.5	3.21	3.5	4.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	16.2	17.9	69.6	3.12	3.9	4.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	15.4	16.3	64.7	3.16	4.0	4.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	17 0	21.4	68.1	2.57	3.2	4.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	15.8	19.5	62.9	2.63	3.2	4.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	14.7	17.4	57.3	2.69	3.3	3.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	14.1	16.2	54.3	2.73	3.3	3.8	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	13.5	15.0	51.0	2.77	3.4	3.8	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	12.9	13.6	47.6	2.81	3.5	3.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	12.2	12.2	43.9	2.85	3.6	3.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	13.4	17.2	46.7	2.23	2.7	3.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	12.7	15.7	43.4	2.28	2.8	3.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	11.8	14.2	39.9	2.34	2.8	3.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	11.4	13.2	37.9	2.37	2.9	3.3	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	11.0	12.2	35.7	2.41	2.9	3.3	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	10.8	11.2	33.9	2.40	3.0	3.1	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	10.5	11.2	33.5	2.45	3.0	3.2	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.0	10.1	31.0	2.49	3.1	3.1	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.1	9.9	29.3	2.46	3.2	3.0	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	8.7	9.6	28.2	2.52	3.2	2.9	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.0	9.4	26.7	2.50	3.4	2.8	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	6.7	9.0	23.7	2.52	3.5	2.6	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	9.6	11.1	26.6	1.92	2.4	2.8	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	9.0	10.0	24.6	1.97	2.5	2.7	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	8.5	8.7	22.3	2.03	2.6	2.6	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	7.9	8.3	21.0	2.02	2.7	2.5	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	8.2	9.3	22.6	2.12	2.4	2.8	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.0	8.2	21.0	2.06	2.6	2.6	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.2	8.0	19.6	2.04	2.7	2.5	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.2	7.9	19.5	2.09	2.7	2.5	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.5	7.7	18.3	2.07	2.8	2.4	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.3	7.6	17.8	2.12	2.8	2.4	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	5.7	7.4	16.7	2.09	2.9	2.2	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.3	7.2	15.9	2.14	3.0	2.2	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	4.7	7.1	14.7	2.10	3.1	2.1	1.94	5.00	3.00	0.250	1.25



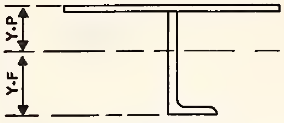
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

40t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 3 1/2 x 5/8 x 14.7 L	14.62	6.7	7.4	14.8	1.61	2.0	2.2	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	6.5	6.6	13.7	1.60	2.1	2.1	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	6.3	6.5	13.4	1.65	2.1	2.1	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	5.8	6.2	12.6	1.65	2.2	2.0	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.0	6.2	12.8	1.68	2.1	2.1	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.4	6.0	11.9	1.67	2.2	2.0	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.4	6.0	11.9	1.71	2.2	2.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	4.8	5.9	11.1	1.69	2.3	1.9	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.2	5.9	11.6	1.74	2.2	2.0	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	4.8	5.8	11.0	1.73	2.3	1.9	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.2	5.7	10.2	1.70	2.4	1.8	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.0	5.6	9.7	1.74	2.4	1.7	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.6	5.5	9.1	1.71	2.5	1.6	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	4.9	5.3	9.3	1.45	1.9	1.8	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.2	5.1	8.6	1.43	2.0	1.7	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.5	5.1	8.8	1.47	2.0	1.7	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	3.9	5.0	8.1	1.45	2.1	1.6	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.0	5.0	8.2	1.49	2.0	1.7	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.6	4.9	7.6	1.47	2.1	1.6	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.5	4.8	7.5	1.50	2.1	1.6	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.1	4.7	6.9	1.48	2.2	1.5	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.0	4.7	6.7	1.51	2.3	1.4	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.7	4.6	6.2	1.47	2.3	1.3	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	3.9	4.3	6.6	1.26	1.7	1.5	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.5	4.2	6.1	1.24	1.8	1.4	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.7	4.2	6.3	1.28	1.7	1.5	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	2.9	4.1	5.4	1.22	1.9	1.3	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.2	4.2	5.8	1.26	1.8	1.4	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.3	4.2	5.9	1.30	1.8	1.4	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	2.9	4.1	5.4	1.27	1.9	1.3	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	2.9	4.0	5.4	1.30	1.9	1.3	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.5	3.9	4.9	1.28	1.9	1.3	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.2	3.8	4.4	1.24	2.0	1.2	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.5	3.9	4.8	1.30	2.0	1.2	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.2	3.9	4.4	1.28	2.0	1.1	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	3.8	4.0	1.23	2.1	1.1	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	3.8	4.1	1.29	2.1	1.1	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	3.6	3.3	1.20	2.3	0.9	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	1.9	3.2	3.2	1.04	1.7	1.0	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.7	3.1	3.0	1.04	1.7	1.0	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.4	3.0	2.6	1.03	1.8	0.9	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	2.9	2.2	1.01	1.9	0.8	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.4	2.4	1.9	0.84	1.4	0.8	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	2.4	1.8	0.84	1.4	0.8	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	2.3	1.6	0.83	1.5	0.7	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	2.2	1.4	0.79	1.6	0.6	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	2.3	1.4	0.80	1.6	0.6	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	2.2	1.2	0.76	1.7	0.5	0.62	2.00	1.50	0.187	0.37



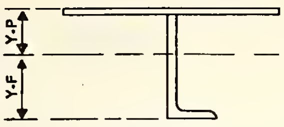
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

40t

8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 4 x 1 x 40.8 L	40.80	30.1	34.9	149.0	3.27	4.3	4.9	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	28.3	32.2	138.8	3.33	4.3	4.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	26.4	29.0	127.6	3.39	4.4	4.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	24.5	25.7	115.7	3.46	4.5	4.7	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	23.5	23.9	109.4	3.50	4.6	4.6	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	22.0	22.5	102.5	3.54	4.7	4.5	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	26.8	39.0	130.6	2.96	3.4	4.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	25.3	35.9	122.0	3.02	3.4	4.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	25.2	29.3	111.4	2.94	3.8	4.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	23.7	32.7	112.9	3.09	3.5	4.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	23.8	27.2	104.3	2.99	3.8	4.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	22.4	24.7	96.5	3.05	3.9	4.3	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	22.1	28.9	102.8	3.16	3.6	4.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	21.2	26.8	97.4	3.21	3.6	4.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	20.9	21.9	87.7	3.12	4.0	4.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	20.4	24.7	91.8	3.25	3.7	4.5	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	20.1	20.4	83.2	3.16	4.1	4.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	19.5	22.3	85.6	3.30	3.8	4.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	18.7	19.3	78.1	3.19	4.2	4.0	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	17.0	18.5	72.8	3.23	4.3	3.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	19.6	22.5	75.7	2.65	3.4	3.9	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	18.5	20.5	70.3	2.70	3.4	3.8	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	17.4	18.3	64.4	2.77	3.5	3.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	16.8	17.0	61.1	2.80	3.6	3.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	15.7	16.2	57.6	2.83	3.7	3.5	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	14.3	15.6	53.9	2.87	3.8	3.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	12.7	15.0	49.7	2.90	3.9	3.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	15.7	18.1	52.3	2.30	2.9	3.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	15.0	16.6	48.9	2.35	3.0	3.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	14.2	14.9	45.1	2.41	3.0	3.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	13.8	13.9	43.0	2.44	3.1	3.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	12.8	13.3	40.6	2.47	3.2	3.0	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	11.7	13.1	38.4	2.45	3.3	2.9	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	11.7	12.9	38.1	2.50	3.3	3.0	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.4	12.4	35.3	2.53	3.4	2.8	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.5	12.2	33.2	2.50	3.5	2.7	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.0	12.0	32.0	2.54	3.5	2.7	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.3	11.8	30.2	2.51	3.7	2.6	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	6.9	11.3	26.7	2.51	3.9	2.4	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	11.4	11.7	30.2	1.98	2.6	2.6	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	10.6	10.9	28.0	2.03	2.7	2.6	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.2	10.4	25.4	2.07	2.8	2.4	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.3	10.2	23.8	2.05	2.9	2.3	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	9.7	10.2	26.0	2.17	2.7	2.5	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.4	10.1	23.9	2.10	2.9	2.4	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.5	9.9	22.3	2.06	3.0	2.2	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.5	9.8	22.2	2.12	3.0	2.3	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.8	9.6	20.7	2.08	3.1	2.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.5	9.5	20.2	2.12	3.1	2.1	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	5.9	9.3	18.8	2.09	3.2	2.0	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.5	9.2	17.9	2.12	3.3	1.9	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	4.9	9.0	16.6	2.07	3.4	1.8	1.94	5.00	3.00	0.250	1.25



PROPERTIES OF
COMBINED BEAM AND PLATE
℄-L AND L

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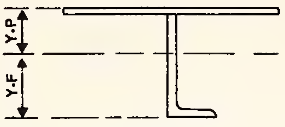
8.92# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7 L	14.62	7.8	8.2	16.9	1.65	2.2	2.1	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.0	8.0	15.7	1.63	2.3	2.0	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	6.8	7.9	15.4	1.69	2.3	2.0	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.1	7.8	14.4	1.67	2.4	1.9	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.3	7.7	14.6	1.71	2.3	1.9	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.6	7.6	13.6	1.68	2.4	1.8	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.6	7.6	13.6	1.72	2.4	1.8	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.0	7.4	12.7	1.70	2.5	1.7	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.4	7.5	13.2	1.75	2.4	1.8	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	4.9	7.4	12.5	1.73	2.5	1.7	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.4	7.2	11.5	1.70	2.6	1.6	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.1	7.1	11.0	1.72	2.7	1.5	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.7	7.0	10.2	1.68	2.8	1.5	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.1	6.6	10.7	1.48	2.1	1.6	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.5	6.4	9.8	1.45	2.2	1.5	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.7	6.5	10.1	1.49	2.2	1.6	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.1	6.3	9.2	1.46	2.3	1.5	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.2	6.3	9.4	1.49	2.2	1.5	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.7	6.2	8.6	1.46	2.3	1.4	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.7	6.2	8.6	1.49	2.3	1.4	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.2	6.0	7.8	1.46	2.4	1.3	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.1	6.0	7.6	1.48	2.5	1.3	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.7	5.9	6.9	1.44	2.5	1.2	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.1	5.4	7.6	1.27	1.8	1.4	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.6	5.3	6.9	1.25	1.9	1.3	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.8	5.4	7.2	1.29	1.9	1.3	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.1	5.1	6.2	1.22	2.0	1.2	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.3	5.2	6.6	1.26	2.0	1.3	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.5	5.3	6.8	1.30	1.9	1.3	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.0	5.2	6.1	1.27	2.0	1.2	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.0	5.2	6.1	1.29	2.0	1.2	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.6	5.0	5.6	1.26	2.1	1.1	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.2	4.9	4.9	1.21	2.2	1.0	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.5	5.0	5.4	1.27	2.1	1.1	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.2	5.0	5.0	1.24	2.2	1.0	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	4.8	4.4	1.19	2.3	0.9	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	4.9	4.6	1.24	2.3	0.9	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	4.6	3.7	1.14	2.4	0.8	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.0	4.0	3.6	1.02	1.8	0.9	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	3.9	3.3	1.01	1.9	0.8	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	3.9	2.9	0.99	2.0	0.8	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	3.7	2.5	0.95	2.1	0.7	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	3.1	2.2	0.82	1.5	0.7	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	3.0	2.0	0.82	1.5	0.7	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	3.0	1.8	0.80	1.6	0.6	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	2.8	1.5	0.75	1.7	0.5	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	2.9	1.5	0.76	1.7	0.5	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	2.7	1.3	0.71	1.8	0.5	0.62	2.00	1.50	0.187	0.37



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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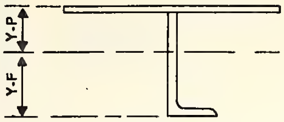
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	77.2	78.4	709.6	6.41	9.2	9.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	71.9	74.0	665.4	6.55	9.3	9.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	66.6	69.6	621.0	6.72	9.3	8.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	63.9	67.4	598.8	6.81	9.4	8.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	74.1	78.3	580.7	5.18	7.4	7.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	70.8	74.3	553.0	5.26	7.4	7.8	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	69.0	72.1	537.9	5.31	7.5	7.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	67.3	70.0	523.3	5.36	7.5	7.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	65.5	67.8	508.2	5.42	7.5	7.8	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	63.7	65.6	493.1	5.48	7.5	7.7	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	62.0	63.4	477.9	5.54	7.5	7.7	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	56.6	59.5	442.7	5.41	7.8	7.4	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	60.2	61.2	462.8	5.62	7.6	7.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	49.4	53.9	393.0	5.64	8.0	7.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	44.8	50.6	362.3	5.84	8.1	7.2	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	50.1	50.5	333.3	4.74	6.6	6.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	43.9	45.7	296.7	4.97	6.8	6.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	40.8	43.3	278.3	5.12	6.8	6.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	38.7	41.9	266.4	5.23	6.9	6.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	46.4	46.5	284.7	4.40	6.1	6.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	43.5	44.1	268.1	4.47	6.2	6.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	40.9	42.2	254.5	4.61	6.2	6.0	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	36.7	40.7	236.5	4.53	6.4	5.8	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	38.0	40.2	239.2	4.76	6.3	5.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	34.3	39.0	223.5	4.64	6.5	5.7	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	33.0	38.2	216.9	4.71	6.6	5.7	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	33.3	34.5	173.6	3.74	5.2	5.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	29.6	32.0	157.6	3.92	5.3	4.9	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	25.7	30.3	142.6	3.97	5.5	4.7	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	27.1	30.3	146.6	4.07	5.4	4.8	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	23.6	29.1	133.6	4.00	5.7	4.6	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	23.9	29.2	134.9	4.08	5.6	4.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	21.7	28.1	125.4	4.12	5.8	4.5	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	34.0	36.3	162.5	3.35	4.5	4.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	32.2	33.5	152.0	3.40	4.5	4.7	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	30.3	30.4	140.3	3.46	4.6	4.6	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	26.8	28.5	127.7	3.53	4.8	4.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	24.9	27.5	121.0	3.57	4.9	4.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	22.8	26.5	113.6	3.60	5.0	4.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	30.5	40.7	143.7	3.04	3.5	4.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	29.0	37.5	134.8	3.10	3.6	4.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	28.7	30.6	122.1	3.01	4.0	4.3	11.00	8.00	4.00	1.000	8.00
8 x 6 3/4 x 33.8 L	33.80	27.4	34.1	125.3	3.17	3.7	4.6	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	27.3	28.4	114.8	3.06	4.0	4.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	25.8	25.9	106.6	3.12	4.1	4.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	25.8	30.1	114.6	3.25	3.8	4.4	8.36	8.00	6.00	0.625	5.00
x 9/16 x 25.7 L	25.70	25.0	27.9	108.8	3.29	3.9	4.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	22.8	24.4	97.2	3.18	4.3	4.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	24.1	25.7	102.7	3.33	4.0	4.3	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	21.2	23.7	92.3	3.22	4.3	3.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	23.2	23.3	95.8	3.37	4.1	4.1	5.93	8.00	6.00	0.437	3.50



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
⊏-L AND L

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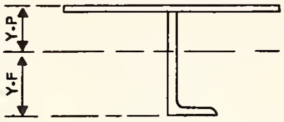
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 1/2 x 19.6 L	19.55	19.5	22.9	86.8	3.24	4.5	3.8	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	17.7	22.1	81.0	3.27	4.6	3.7	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	22.7	23.5	83.7	2.71	3.6	3.7	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	21.4	21.6	78.0	2.77	3.6	3.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	19.1	20.5	71.7	2.83	3.8	3.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	17.7	20.0	68.1	2.85	3.8	3.4	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	16.3	19.4	64.2	2.88	3.9	3.3	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	14.8	18.8	60.1	2.90	4.1	3.2	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.2	18.2	55.3	2.92	4.2	3.0	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	18.3	18.9	58.2	2.36	3.1	3.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	17.3	17.6	54.6	2.40	3.2	3.1	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	15.5	16.9	50.5	2.46	3.3	3.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	14.5	16.5	48.1	2.48	3.3	2.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	13.3	16.0	45.4	2.50	3.4	2.8	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.2	15.7	42.9	2.48	3.5	2.7	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.1	15.6	42.7	2.53	3.5	2.7	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.8	15.2	39.4	2.54	3.7	2.6	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.8	14.9	37.0	2.50	3.8	2.5	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.3	14.7	35.6	2.54	3.8	2.4	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.5	14.4	33.5	2.50	3.9	2.3	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.1	13.9	29.4	2.47	4.1	2.1	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	12.2	13.6	33.8	2.02	2.8	2.5	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.0	13.1	31.5	2.06	2.9	2.4	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.5	12.6	28.5	2.09	3.0	2.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.6	12.4	26.6	2.06	3.1	2.1	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.0	12.6	29.3	2.19	2.9	2.3	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.7	12.3	26.8	2.11	3.1	2.2	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.8	12.1	24.8	2.07	3.2	2.1	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.8	12.1	24.8	2.11	3.2	2.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.0	11.8	23.1	2.07	3.3	2.0	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.7	11.7	22.4	2.10	3.3	1.9	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.1	11.5	20.8	2.06	3.4	1.8	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.6	11.4	19.8	2.08	3.5	1.7	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.0	11.1	18.2	2.03	3.6	1.6	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.2	10.0	19.1	1.68	2.3	1.9	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.3	9.7	17.7	1.65	2.4	1.8	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.1	9.6	17.4	1.70	2.4	1.8	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.3	9.5	16.2	1.68	2.5	1.7	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.5	9.5	16.4	1.71	2.5	1.7	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.8	9.3	15.2	1.68	2.6	1.6	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.8	9.3	15.2	1.71	2.6	1.6	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.2	9.1	14.1	1.68	2.7	1.5	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.1	9.1	13.9	1.71	2.7	1.5	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.5	8.9	12.8	1.67	2.8	1.4	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.2	8.9	12.1	1.68	2.9	1.4	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.8	8.7	11.2	1.64	3.0	1.3	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.3	8.1	12.0	1.48	2.3	1.5	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.6	7.8	10.9	1.44	2.4	1.4	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.9	7.9	11.3	1.48	2.3	1.4	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.2	7.7	10.3	1.44	2.4	1.3	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.4	7.8	10.5	1.48	2.4	1.3	2.30	3.50	3.00	0.375	1.31



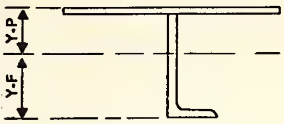
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.8	7.6	9.6	1.44	2.5	1.3	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.8	7.6	9.5	1.46	2.5	1.2	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.3	7.5	8.6	1.42	2.6	1.2	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.2	7.5	8.3	1.43	2.6	1.1	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.8	7.3	7.6	1.39	2.7	1.0	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.3	6.7	8.5	1.27	2.0	1.3	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.8	6.5	7.8	1.25	2.1	1.2	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.0	6.6	8.1	1.28	2.0	1.2	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.2	6.3	6.9	1.20	2.2	1.1	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.5	6.5	7.3	1.25	2.1	1.1	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.6	6.6	7.5	1.28	2.1	1.1	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.1	6.4	6.8	1.24	2.2	1.1	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.1	6.4	6.8	1.26	2.2	1.1	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.7	6.2	6.1	1.22	2.3	1.0	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.3	6.0	5.4	1.17	2.3	0.9	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.6	6.2	6.0	1.23	2.3	1.0	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	6.1	5.4	1.19	2.4	0.9	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	5.9	4.8	1.14	2.4	0.8	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	6.1	5.0	1.18	2.4	0.8	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	5.6	3.9	1.07	2.6	0.7	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.1	4.9	4.0	0.99	1.9	0.8	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	4.9	3.6	0.98	2.0	0.7	1.31	2.50	2.00	0.312	0.78
2 1/2 x 2 x 1/4 x 3.62 L	3.60	1.5	4.7	3.2	0.94	2.1	0.7	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	4.6	2.7	0.89	2.2	0.6	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	3.8	2.4	0.79	1.6	0.6	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	3.7	2.2	0.78	1.6	0.6	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	3.6	2.0	0.76	1.7	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	3.4	1.6	0.71	1.8	0.5	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	3.5	1.6	0.71	1.8	0.5	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	3.2	1.4	0.66	1.8	0.4	0.62	2.00	1.50	0.187	0.37



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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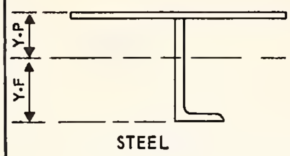
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	79.9	86.9	760.8	6.52	9.5	8.8	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	74.4	82.6	715.7	6.65	9.6	8.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	68.9	78.4	670.3	6.82	9.7	8.6	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	66.1	76.3	647.5	6.91	9.8	8.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	81.0	81.1	619.3	5.27	7.6	7.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	76.9	77.9	591.2	5.35	7.7	7.6	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	74.7	76.1	576.0	5.40	7.7	7.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	72.5	74.4	561.1	5.45	7.7	7.5	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	70.2	72.7	545.7	5.51	7.8	7.5	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	67.9	71.0	530.3	5.57	7.8	7.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	65.6	69.3	514.8	5.64	7.8	7.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	58.7	66.6	477.0	5.49	8.1	7.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	63.3	67.6	499.4	5.71	7.9	7.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	51.1	61.2	425.7	5.72	8.3	7.0	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	46.3	58.0	393.5	5.91	8.5	6.8	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	52.0	56.7	360.3	4.82	6.9	6.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	45.5	52.1	322.5	5.04	7.1	6.2	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	42.1	49.9	303.3	5.18	7.2	6.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	39.9	48.5	290.9	5.29	7.3	6.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	48.3	52.2	308.0	4.47	6.4	5.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	45.1	49.9	290.8	4.54	6.4	5.8	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	42.3	48.2	276.7	4.68	6.5	5.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	38.1	46.5	257.1	4.60	6.8	5.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	39.2	46.3	260.7	4.82	6.6	5.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	35.5	44.9	243.4	4.70	6.9	5.4	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	34.1	44.1	236.4	4.76	6.9	5.4	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	34.6	39.3	189.1	3.80	5.5	4.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	30.7	36.9	172.3	3.97	5.6	4.7	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	26.6	35.2	155.9	4.01	5.9	4.4	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	28.0	35.4	160.6	4.11	5.7	4.5	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	24.4	34.1	146.1	4.03	6.0	4.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	24.7	34.3	147.6	4.10	6.0	4.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.3	33.2	137.2	4.13	6.1	4.1	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 40.8 L	40.80	37.8	38.3	176.5	3.41	4.7	4.6	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	34.8	36.6	165.6	3.47	4.8	4.5	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	31.4	34.8	153.3	3.52	4.9	4.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	27.8	32.9	139.8	3.58	5.0	4.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	25.8	32.0	132.6	3.61	5.1	4.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	23.6	31.0	124.5	3.64	5.3	4.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	34.5	42.3	157.4	3.12	3.7	4.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	33.1	38.9	148.0	3.18	3.8	4.5	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	31.8	32.5	133.2	3.07	4.2	4.1	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	31.5	35.3	138.0	3.25	3.9	4.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	29.5	31.2	125.5	3.12	4.3	4.0	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	26.8	29.8	116.8	3.17	4.4	3.9	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	30.0	31.2	126.5	3.31	4.1	4.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	28.9	29.2	120.2	3.35	4.2	4.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	23.6	28.4	106.7	3.22	4.5	3.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	26.5	28.3	113.5	3.38	4.3	4.0	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	22.0	27.6	101.4	3.25	4.6	3.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	23.9	27.5	105.9	3.41	4.4	3.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	20.2	26.9	95.3	3.27	4.7	3.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.3	26.1	88.9	3.29	4.9	3.4	5.06	8.00	4.00	0.437	3.50



PROPERTIES OF
COMBINED BEAM AND PLATE
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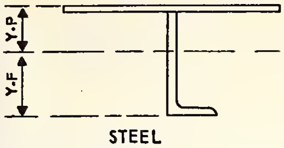
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
7 x 4 x 7/8 x 30.2 L	30.12	24.5	26.1	92.0	2.77	3.8	3.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	22.2	25.1	85.8	2.81	3.9	3.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	19.8	24.0	78.9	2.86	4.0	3.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.4	23.4	75.0	2.88	4.1	3.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	16.9	22.9	70.6	2.90	4.2	3.1	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.3	22.3	66.0	2.91	4.3	3.0	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.5	21.7	60.7	2.92	4.5	2.8	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	19.7	21.3	64.3	2.40	3.3	3.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	18.0	20.6	60.3	2.44	3.3	2.9	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.1	19.8	55.8	2.49	3.5	2.8	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.0	19.4	53.1	2.50	3.5	2.7	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	13.7	19.0	50.1	2.52	3.6	2.6	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.6	18.7	47.2	2.48	3.8	2.5	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.5	18.6	46.9	2.53	3.8	2.5	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	11.1	18.2	43.2	2.53	3.9	2.4	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.1	17.8	40.5	2.48	4.0	2.3	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.6	17.6	39.0	2.51	4.1	2.2	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.8	17.3	36.6	2.46	4.2	2.1	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.3	16.8	31.9	2.42	4.4	1.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	12.7	16.0	37.4	2.04	2.9	2.3	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.4	15.6	34.8	2.08	3.0	2.2	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.8	15.0	31.4	2.09	3.2	2.1	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.9	14.7	29.2	2.06	3.3	2.0	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.3	15.1	32.4	2.19	3.1	2.1	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.0	14.8	29.5	2.10	3.3	2.0	3.53	5.00	3.50	0.437	2.18
x 3 x 7/16 x 11.3 L	11.25	8.0	14.4	27.2	2.05	3.4	1.9	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.0	14.5	27.2	2.09	3.4	1.9	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.2	14.2	25.2	2.05	3.5	1.8	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.9	14.1	24.4	2.07	3.6	1.7	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.2	13.8	22.6	2.02	3.6	1.6	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.7	13.8	21.4	2.03	3.7	1.6	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.2	13.4	19.7	1.96	3.8	1.5	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.5	11.9	21.2	1.69	2.5	1.8	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.5	11.6	19.5	1.65	2.6	1.7	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.3	11.6	19.2	1.70	2.6	1.7	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.5	11.3	17.8	1.67	2.7	1.6	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.7	11.4	18.0	1.70	2.7	1.6	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.0	11.1	16.6	1.66	2.8	1.5	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.9	11.2	16.6	1.69	2.8	1.5	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.3	11.0	15.4	1.65	2.9	1.4	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.2	11.0	15.1	1.67	2.9	1.4	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.6	10.8	13.9	1.63	3.0	1.3	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.3	10.7	13.1	1.63	3.1	1.2	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	10.5	12.1	1.58	3.1	1.2	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.5	9.7	13.2	1.47	2.4	1.4	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.8	9.4	12.0	1.42	2.5	1.3	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.0	9.6	12.4	1.46	2.5	1.3	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.4	9.3	11.2	1.42	2.6	1.2	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.5	9.4	11.4	1.45	2.6	1.2	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.9	9.2	10.4	1.41	2.6	1.1	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.9	9.2	10.3	1.42	2.7	1.1	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.4	9.0	9.3	1.38	2.7	1.0	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.2	9.0	9.0	1.38	2.8	1.0	1.56	3.50	3.00	0.250	0.87



PROPERTIES OF COMBINED BEAM AND PLATE

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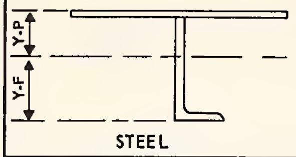
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	8.7	8.2	1.33	2.8	0.9	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.5	8.0	9.4	1.26	2.1	1.2	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.9	7.8	8.5	1.23	2.2	1.1	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.1	8.0	8.9	1.26	2.2	1.1	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.3	7.5	7.5	1.18	2.3	1.0	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.5	7.8	8.0	1.22	2.3	1.0	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.7	7.9	8.2	1.25	2.2	1.0	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.2	7.7	7.4	1.21	2.3	1.0	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.2	7.7	7.4	1.22	2.3	1.0	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.8	7.5	6.7	1.18	2.4	0.9	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.4	7.2	5.8	1.12	2.5	0.8	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.7	7.5	6.5	1.19	2.4	0.9	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	7.3	5.8	1.14	2.5	0.8	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	7.0	5.1	1.09	2.6	0.7	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	7.3	5.3	1.12	2.5	0.7	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.6	6.7	4.2	1.01	2.7	0.6	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.1	5.9	4.3	0.96	2.0	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	5.8	3.9	0.94	2.1	0.7	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	5.6	3.4	0.90	2.2	0.6	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	5.4	2.8	0.84	2.3	0.5	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.6	4.5	2.6	0.76	1.7	0.6	1.36	2.00	2.00	0.375	0.75
2 x 2 x 5/16 x 3.92 L	3.91	1.4	4.4	2.4	0.75	1.7	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	4.3	2.1	0.72	1.8	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	4.0	1.8	0.66	1.8	0.4	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	4.0	1.7	0.67	1.9	0.4	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.8	3.7	1.4	0.62	1.9	0.4	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF
COMBINED BEAM AND PLATE
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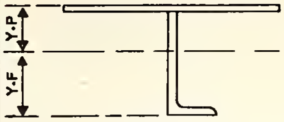
12.75# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	82.6	96.8	815.9	6.61	9.9	8.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	76.9	92.6	769.5	6.74	10.0	8.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	71.1	88.5	722.4	6.90	10.2	8.2	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	68.2	86.6	698.6	6.99	10.2	8.1	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	83.8	89.2	661.5	5.36	7.9	7.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	79.6	86.0	632.9	5.44	8.0	7.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	77.2	84.3	617.2	5.49	8.0	7.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	75.0	82.7	602.0	5.54	8.0	7.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	72.6	81.0	586.2	5.59	8.1	7.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	70.2	79.3	570.3	5.65	8.1	7.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	67.8	77.7	554.3	5.72	8.2	7.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	60.8	74.8	513.5	5.57	8.4	6.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	65.3	76.1	538.3	5.79	8.2	7.1	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	52.8	69.6	459.8	5.78	8.7	6.6	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	47.7	66.7	425.7	5.95	8.9	6.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	53.9	63.8	389.0	4.89	7.2	6.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	47.0	59.5	349.5	5.10	7.4	5.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	43.4	57.4	329.2	5.23	7.6	5.7	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	41.1	56.2	315.9	5.32	7.7	5.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	50.0	58.8	332.7	4.54	6.7	5.7	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	46.7	56.6	314.9	4.61	6.7	5.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	43.7	55.0	299.9	4.73	6.9	5.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	39.4	53.1	278.5	4.64	7.1	5.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	40.4	53.2	282.9	4.86	7.0	5.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	36.6	51.6	263.8	4.73	7.2	5.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	35.2	50.9	256.3	4.78	7.3	5.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	28.8	47.9	221.5	4.72	7.7	4.6	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	25.5	46.5	202.7	4.82	8.0	4.4	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	35.9	44.8	205.3	3.85	5.7	4.6	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	31.7	42.6	187.5	4.00	5.9	4.4	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	27.4	40.9	169.3	4.02	6.2	4.1	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	28.8	41.2	174.7	4.12	6.1	4.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	25.1	39.8	158.6	4.03	6.3	4.0	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.4	40.1	160.2	4.10	6.3	4.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.9	39.0	148.8	4.11	6.5	3.8	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	19.6	37.3	132.7	3.89	6.8	3.6	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.4	36.3	116.4	3.96	7.1	3.2	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	39.1	43.3	191.5	3.47	4.9	4.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	36.1	41.6	180.0	3.52	5.0	4.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	32.5	39.8	166.8	3.57	5.1	4.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	28.7	38.0	152.3	3.62	5.3	4.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	26.6	37.1	144.4	3.64	5.4	3.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	24.4	36.1	135.5	3.65	5.6	3.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	39.2	43.8	172.1	3.19	3.9	4.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	37.8	40.3	162.2	3.25	4.0	4.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	33.0	37.0	144.9	3.12	4.4	3.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	36.3	36.6	151.4	3.31	4.1	4.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	30.5	35.7	136.8	3.17	4.5	3.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	27.7	34.3	127.4	3.21	4.6	3.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	32.2	34.8	138.9	3.36	4.3	4.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	29.8	34.0	131.9	3.39	4.4	3.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	24.4	32.9	116.4	3.25	4.8	3.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	27.3	33.1	124.5	3.42	4.6	3.8	6.75	8.00	6.00	0.500	4.00



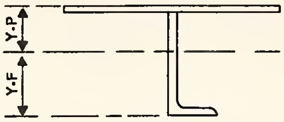
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

40t

12.75# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	22.7	32.2	110.6	3.27	4.9	3.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	24.6	32.3	116.0	3.43	4.7	3.6	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	20.8	31.4	103.9	3.28	5.0	3.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.8	30.6	96.8	3.28	5.2	3.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	25.4	30.0	100.6	2.81	4.0	3.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	23.0	29.0	93.9	2.84	4.1	3.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.4	28.0	86.3	2.88	4.2	3.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.9	27.4	81.9	2.89	4.3	3.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.3	26.9	77.1	2.90	4.4	2.9	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.7	26.3	71.9	2.90	4.6	2.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.9	25.6	65.9	2.89	4.7	2.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	20.5	24.6	70.5	2.43	3.4	2.9	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	18.6	23.9	66.1	2.47	3.6	2.8	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.6	23.2	61.1	2.50	3.7	2.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.4	22.8	58.1	2.51	3.8	2.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.1	22.4	54.7	2.51	3.9	2.4	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.9	22.0	51.4	2.47	4.0	2.3	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.8	22.0	51.1	2.51	4.0	2.3	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	11.8	21.7	48.3	2.51	4.1	2.2	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.4	21.5	46.9	2.50	4.1	2.2	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.4	21.1	43.9	2.45	4.2	2.1	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.3	21.2	43.6	2.46	4.3	2.1	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	9.8	21.0	42.1	2.46	4.3	2.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.0	20.6	39.4	2.41	4.4	1.9	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.4	20.1	34.2	2.34	4.6	1.7	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.2	18.7	41.1	2.06	3.1	2.2	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.8	18.3	38.1	2.08	3.2	2.1	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.1	17.8	34.2	2.08	3.4	1.9	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.1	17.4	31.8	2.04	3.5	1.8	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.2	17.5	32.0	2.07	3.5	1.8	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.2	17.1	29.5	2.02	3.6	1.7	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.2	17.2	29.4	2.05	3.6	1.7	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.4	16.8	27.2	2.00	3.7	1.6	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.0	16.8	26.3	2.02	3.7	1.6	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.3	16.5	24.3	1.96	3.8	1.5	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.8	16.4	22.9	1.96	3.9	1.4	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.3	16.0	21.0	1.89	4.0	1.3	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	10.8	14.6	26.7	1.69	2.5	1.8	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	9.7	14.3	24.9	1.71	2.6	1.7	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.8	14.0	23.3	1.68	2.7	1.7	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.8	13.7	21.4	1.64	2.8	1.6	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.4	14.0	22.6	1.72	2.7	1.6	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.5	13.7	20.9	1.68	2.8	1.5	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.6	13.8	21.1	1.71	2.8	1.5	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	6.7	13.4	19.3	1.64	2.9	1.4	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.8	13.6	19.6	1.67	2.9	1.4	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.1	13.2	18.0	1.63	2.9	1.4	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.8	13.6	19.5	1.70	2.9	1.4	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.1	13.3	18.0	1.65	3.0	1.4	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.5	13.0	16.6	1.61	3.0	1.3	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.8	13.3	17.5	1.66	3.0	1.3	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.3	13.1	16.3	1.63	3.1	1.2	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.7	12.8	14.9	1.57	3.1	1.2	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.8	13.0	15.2	1.61	3.1	1.2	1.94	4.00	4.00	0.250	1.00



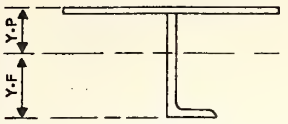
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	12.7	14.0	1.57	3.2	1.1	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	12.4	12.9	1.52	3.3	1.0	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.6	11.5	14.4	1.44	2.6	1.3	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.9	11.1	13.0	1.40	2.6	1.2	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.1	11.3	13.5	1.43	2.6	1.2	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.5	11.0	12.1	1.38	2.7	1.1	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.6	11.1	12.4	1.41	2.7	1.1	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.0	10.8	11.2	1.36	2.8	1.0	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.9	10.9	11.0	1.37	2.8	1.0	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	10.6	10.0	1.32	2.9	0.9	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	10.6	9.6	1.32	2.9	0.9	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	10.3	8.7	1.27	3.0	0.8	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.0	9.3	9.2	1.20	2.3	1.0	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.6	9.2	8.6	1.19	2.4	0.9	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.3	9.0	7.9	1.17	2.4	0.9	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.8	8.8	7.1	1.13	2.5	0.8	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	8.6	6.2	1.09	2.6	0.7	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	8.2	5.4	1.03	2.7	0.7	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	6.9	4.6	0.92	2.1	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	6.7	4.2	0.89	2.2	0.6	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	6.5	3.6	0.85	2.3	0.6	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.6	5.2	2.8	0.73	1.8	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	5.1	2.6	0.71	1.8	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	4.9	2.2	0.68	1.9	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	4.5	1.9	0.63	1.9	0.4	0.81	2.00	1.50	0.250	0.50



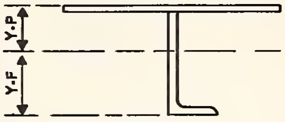
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	85.1	107.3	870.6	6.69	10.2	8.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	79.2	103.3	822.4	6.81	10.4	8.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	73.2	99.4	773.1	6.95	10.6	7.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	70.1	97.5	748.0	7.03	10.7	7.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	86.4	97.8	704.2	5.43	8.1	7.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	82.0	94.7	674.6	5.51	8.2	7.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	79.6	93.1	658.6	5.56	8.3	7.1	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	77.3	91.5	642.8	5.61	8.3	7.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	74.8	89.9	626.4	5.66	8.4	7.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	72.3	88.3	609.9	5.72	8.4	6.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	69.8	86.7	593.2	5.78	8.5	6.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	62.7	83.5	549.5	5.62	8.8	6.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	67.2	85.2	576.5	5.84	8.6	6.8	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	54.3	78.6	492.8	5.82	9.1	6.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	48.9	75.8	456.2	5.96	9.3	6.0	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	55.6	71.5	417.3	4.94	7.5	5.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	48.4	67.3	375.5	5.13	7.8	5.6	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	44.6	65.4	353.8	5.24	7.9	5.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	42.1	64.3	339.4	5.33	8.1	5.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	51.6	65.8	357.1	4.59	6.9	5.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	48.1	63.7	338.3	4.65	7.0	5.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	45.0	62.3	322.2	4.76	7.2	5.2	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	40.5	60.2	299.1	4.67	7.4	5.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	41.4	60.7	303.9	4.87	7.3	5.0	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	37.6	58.9	283.2	4.74	7.5	4.8	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	36.[illegible]	58.2	275.1	4.78	7.6	4.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	29.5	55.0	237.2	4.69	8.0	4.3	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.0	53.9	216.4	4.76	8.3	4.0	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	37.0	50.6	221.1	3.89	6.0	4.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	32.6	48.6	201.8	4.02	6.2	4.2	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.1	46.9	181.9	4.02	6.5	3.9	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	29.4	47.4	187.8	4.12	6.4	4.0	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	25.7	45.8	170.2	4.01	6.6	3.7	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.9	46.2	171.8	4.08	6.6	3.7	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.4	45.1	159.3	4.07	6.8	3.5	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.1	43.1	141.8	3.85	7.1	3.3	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.7	42.3	123.7	3.87	7.4	2.9	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	40.4	48.6	206.2	3.51	5.1	4.2	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	37.2	47.0	194.0	3.56	5.2	4.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	33.5	45.2	179.9	3.59	5.4	4.0	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	29.5	43.4	164.1	3.63	5.6	3.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	27.3	42.5	155.5	3.64	5.7	3.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	25.0	41.6	145.8	3.64	5.8	3.5	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	44.2	45.3	186.6	3.24	4.1	4.2	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	41.6	42.8	176.0	3.29	4.2	4.1	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	34.1	41.7	156.4	3.15	4.6	3.8	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	37.6	41.4	164.4	3.35	4.4	4.0	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	31.5	40.4	147.7	3.20	4.7	3.7	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	28.5	39.1	137.6	3.23	4.8	3.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	33.0	39.8	150.7	3.39	4.6	3.8	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	30.5	39.1	143.0	3.41	4.7	3.7	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	25.1	37.7	125.6	3.26	5.0	3.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	28.0	38.2	134.8	3.43	4.8	3.5	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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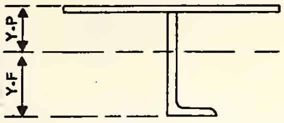
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	23.3	37.0	119.2	3.27	5.1	3.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.1	37.4	125.4	3.43	5.0	3.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.3	36.2	111.8	3.27	5.3	3.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.2	35.4	103.9	3.26	5.4	2.9	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	26.2	34.2	108.8	2.83	4.2	3.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	23.7	33.2	101.5	2.86	4.3	3.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.9	32.2	93.2	2.88	4.4	2.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.4	31.6	88.3	2.89	4.6	2.8	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.8	31.1	82.9	2.88	4.7	2.7	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.1	30.5	77.2	2.87	4.8	2.5	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.2	29.8	70.5	2.84	5.0	2.4	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	21.1	28.2	76.5	2.45	3.6	2.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.2	27.5	71.7	2.48	3.7	2.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.0	26.8	66.1	2.50	3.9	2.5	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.8	26.4	62.7	2.50	4.0	2.4	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.4	26.0	58.9	2.49	4.1	2.3	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.2	25.5	55.3	2.45	4.2	2.2	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.1	25.6	54.9	2.48	4.2	2.1	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.1	25.3	51.8	2.47	4.3	2.0	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.6	25.1	50.2	2.45	4.3	2.0	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.6	24.6	46.8	2.40	4.4	1.9	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.5	24.6	46.6	2.41	4.5	1.9	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	9.9	24.5	44.8	2.40	4.5	1.8	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.1	24.0	41.9	2.35	4.6	1.7	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.5	23.4	36.1	2.26	4.8	1.5	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.5	21.6	44.5	2.05	3.3	2.1	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.1	21.2	41.1	2.06	3.4	1.9	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.3	20.7	36.8	2.05	3.6	1.8	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.3	20.2	34.0	2.00	3.7	1.7	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.4	20.4	34.3	2.04	3.7	1.7	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.4	19.8	31.5	1.98	3.8	1.6	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.3	20.0	31.4	2.01	3.8	1.6	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.5	19.6	28.9	1.95	3.9	1.5	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.1	19.6	28.0	1.96	3.9	1.4	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.4	19.1	25.8	1.90	4.0	1.3	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.9	19.1	24.2	1.89	4.1	1.3	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.3	18.5	22.1	1.82	4.2	1.2	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.1	16.9	29.1	1.69	2.6	1.7	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	9.9	16.6	27.0	1.70	2.7	1.6	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.0	16.3	25.2	1.67	2.8	1.5	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.0	15.9	23.0	1.63	2.9	1.5	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.6	16.3	24.4	1.70	2.8	1.5	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.7	15.9	22.5	1.65	2.9	1.4	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.7	16.1	22.7	1.68	2.9	1.4	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	6.9	15.6	20.7	1.61	3.0	1.3	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.0	15.8	21.0	1.64	3.0	1.3	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.2	15.3	19.3	1.59	3.1	1.3	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.9	15.9	20.8	1.66	3.0	1.3	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.2	15.5	19.2	1.61	3.1	1.2	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.6	15.1	17.7	1.56	3.2	1.2	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.9	15.5	18.6	1.61	3.1	1.2	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.4	15.2	17.3	1.57	3.2	1.1	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.8	14.8	15.7	1.52	3.3	1.1	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.9	15.1	16.1	1.55	3.3	1.1	1.94	4.00	4.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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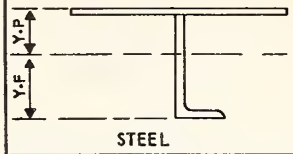
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	14.7	14.8	1.51	3.3	1.0	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	14.4	13.6	1.45	3.4	0.9	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.7	13.3	15.4	1.41	2.7	1.2	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.0	12.8	13.9	1.36	2.8	1.1	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.2	13.1	14.4	1.40	2.7	1.1	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.6	12.7	12.9	1.34	2.8	1.0	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.7	12.9	13.1	1.37	2.8	1.0	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.1	12.5	11.9	1.32	2.9	0.9	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.0	12.6	11.7	1.33	2.9	0.9	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	12.2	10.5	1.27	3.0	0.9	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	12.2	10.1	1.27	3.0	0.8	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	11.8	9.1	1.21	3.1	0.8	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.1	10.7	9.9	1.17	2.4	0.9	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.7	10.6	9.2	1.15	2.5	0.9	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.3	10.4	8.4	1.13	2.5	0.8	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	10.1	7.5	1.09	2.6	0.7	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	9.8	6.5	1.04	2.7	0.7	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	9.3	5.7	0.98	2.7	0.6	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	7.9	4.9	0.88	2.2	0.6	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	7.6	4.4	0.85	2.3	0.6	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	7.3	3.8	0.81	2.3	0.5	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.6	5.8	3.0	0.70	1.8	0.5	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.5	5.7	2.7	0.68	1.9	0.5	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	5.4	2.4	0.64	1.9	0.4	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	5.0	1.9	0.59	2.0	0.4	0.81	2.00	1.50	0.250	0.50



PROPERTIES OF COMBINED BEAM AND PLATE C-L AND L

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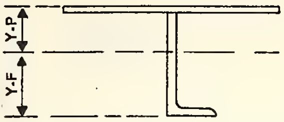
15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	87.5	118.8	925.8	6.74	10.6	7.8	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	81.3	114.9	875.2	6.85	10.8	7.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	75.0	111.2	823.3	6.98	11.0	7.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	71.8	109.5	796.6	7.05	11.1	7.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	89.0	107.3	747.8	5.50	8.4	7.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	84.4	104.3	717.2	5.57	8.5	6.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	81.9	102.7	700.5	5.62	8.6	6.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	79.5	101.1	684.1	5.66	8.6	6.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	76.9	99.6	667.0	5.71	8.7	6.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	74.3	98.0	649.7	5.76	8.7	6.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	71.6	96.5	632.2	5.82	8.8	6.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	64.4	93.1	585.4	5.66	9.1	6.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	68.9	95.1	614.4	5.88	8.9	6.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	55.7	88.3	525.1	5.83	9.4	5.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	50.0	85.8	485.7	5.95	9.7	5.7	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	57.1	79.8	445.4	4.98	7.8	5.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	49.6	75.9	401.0	5.14	8.1	5.3	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	45.6	74.1	377.5	5.24	8.3	5.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	42.9	73.2	361.9	5.31	8.4	4.9	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	53.1	73.5	381.3	4.62	7.2	5.2	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	49.4	71.4	361.5	4.67	7.3	5.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	46.1	70.1	344.1	4.78	7.5	4.9	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	41.6	67.9	319.1	4.67	7.7	4.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	42.4	68.7	324.2	4.87	7.7	4.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	38.5	66.7	301.9	4.73	7.8	4.5	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	36.9	66.1	293.0	4.76	7.9	4.4	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	30.2	62.7	252.1	4.65	8.4	4.0	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.5	61.7	229.1	4.69	8.7	3.7	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	38.0	57.0	236.6	3.90	6.2	4.1	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	33.4	55.2	215.7	4.01	6.5	3.9	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.7	53.4	193.9	3.99	6.7	3.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	30.0	54.1	200.3	4.09	6.7	3.7	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	26.2	52.3	181.1	3.97	6.9	3.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.4	52.8	182.7	4.03	6.9	3.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.8	51.7	169.1	4.01	7.1	3.3	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.5	49.3	150.3	3.79	7.3	3.0	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.9	48.6	130.3	3.77	7.7	2.7	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	41.6	54.4	220.9	3.54	5.3	4.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	38.2	52.8	207.9	3.58	5.4	3.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	34.4	51.1	192.6	3.61	5.6	3.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	30.2	49.3	175.5	3.63	5.8	3.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	28.0	48.4	166.2	3.63	5.9	3.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	25.5	47.4	155.5	3.62	6.1	3.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	46.6	49.7	201.2	3.29	4.3	4.1	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	42.7	48.3	189.8	3.33	4.4	3.9	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	35.1	46.8	167.9	3.18	4.8	3.6	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	38.6	46.9	177.2	3.37	4.6	3.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	32.3	45.6	158.5	3.21	4.9	3.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	29.2	44.3	147.5	3.24	5.0	3.3	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	33.8	45.4	162.2	3.41	4.8	3.6	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	31.2	44.6	153.7	3.41	4.9	3.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	25.6	42.9	134.4	3.25	5.2	3.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	28.5	43.7	144.7	3.42	5.1	3.3	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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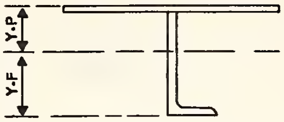
40t

15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	23.8	42.2	127.4	3.25	5.4	3.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.6	42.9	134.3	3.41	5.2	3.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.7	41.4	119.3	3.24	5.5	2.9	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.6	40.6	110.6	3.22	5.7	2.7	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	26.9	38.7	117.0	2.84	4.4	3.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	24.3	37.7	108.9	2.86	4.5	2.9	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.4	36.7	99.8	2.87	4.7	2.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.8	36.1	94.4	2.87	4.8	2.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.1	35.5	88.5	2.85	4.9	2.5	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.4	34.9	82.1	2.83	5.0	2.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.4	34.2	74.8	2.79	5.2	2.2	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	21.7	32.0	82.3	2.46	3.8	2.6	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.6	31.3	77.0	2.48	3.9	2.5	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.4	30.6	70.8	2.48	4.1	2.3	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.1	30.2	67.0	2.48	4.2	2.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.7	29.8	62.8	2.46	4.3	2.1	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.5	29.2	58.8	2.41	4.4	2.0	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.3	29.4	58.4	2.44	4.4	2.0	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.3	29.0	54.9	2.42	4.5	1.9	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.8	28.8	53.2	2.40	4.5	1.8	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.7	28.2	49.5	2.34	4.6	1.8	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.6	28.3	49.2	2.35	4.6	1.7	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.1	28.1	47.3	2.34	4.7	1.7	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.2	27.6	44.1	2.28	4.8	1.6	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.6	26.8	37.8	2.18	5.0	1.4	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.9	24.7	47.7	2.04	3.4	1.9	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.4	24.2	44.0	2.04	3.6	1.8	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.5	23.7	39.2	2.02	3.7	1.7	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.5	23.1	36.2	1.96	3.8	1.6	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.5	23.4	36.4	1.99	3.8	1.6	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.5	22.7	33.4	1.93	3.9	1.5	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.4	23.0	33.2	1.96	3.9	1.4	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.6	22.4	30.5	1.90	4.0	1.4	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.2	22.4	29.4	1.90	4.1	1.3	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.5	21.9	27.1	1.84	4.1	1.2	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.0	21.8	25.3	1.81	4.2	1.2	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.4	21.2	23.1	1.75	4.3	1.1	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.4	19.3	31.3	1.68	2.8	1.6	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.1	19.0	28.9	1.68	2.9	1.5	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.2	18.7	26.9	1.65	2.9	1.4	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.1	18.1	24.6	1.60	3.0	1.4	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.7	18.7	26.0	1.67	3.0	1.4	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.8	18.2	24.0	1.62	3.1	1.3	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.9	18.5	24.2	1.64	3.1	1.3	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.0	17.8	22.0	1.57	3.1	1.2	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.1	18.0	22.3	1.60	3.1	1.2	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.4	17.5	20.4	1.55	3.2	1.2	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.0	18.2	22.1	1.61	3.2	1.2	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.3	17.7	20.3	1.57	3.2	1.1	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.6	17.3	18.6	1.52	3.3	1.1	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.0	17.7	19.6	1.56	3.3	1.1	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.5	17.4	18.2	1.52	3.3	1.0	2.25	4.00	3.50	0.312	1.25



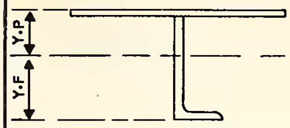
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

15.3# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 3 x 5/16 x 7.2 L	7.11	4.9	16.9	16.5	1.46	3.4	1.0	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.0	17.2	16.9	1.49	3.4	1.0	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.5	16.8	15.5	1.44	3.5	0.9	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	16.3	14.2	1.39	3.5	0.9	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.8	15.2	16.4	1.38	2.8	1.1	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	5.1	14.6	14.7	1.32	2.9	1.0	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.3	15.0	15.2	1.36	2.9	1.0	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.7	14.4	13.6	1.30	2.9	0.9	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.7	14.7	13.9	1.32	2.9	0.9	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.2	14.2	12.5	1.27	3.0	0.9	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	4.1	14.3	12.3	1.28	3.0	0.9	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.6	13.8	11.0	1.22	3.1	0.8	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.4	13.8	10.5	1.21	3.1	0.8	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	13.3	9.5	1.16	3.2	0.7	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.2	12.1	10.4	1.13	2.5	0.9	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.8	12.0	9.7	1.11	2.6	0.8	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.4	11.8	8.9	1.08	2.6	0.8	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	11.4	7.9	1.04	2.7	0.7	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.5	11.0	6.8	0.99	2.8	0.6	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	10.3	5.9	0.93	2.8	0.6	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.3	8.8	5.2	0.85	2.3	0.6	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	2.0	8.5	4.6	0.81	2.3	0.5	1.31	2.50	2.00	0.312	0.78



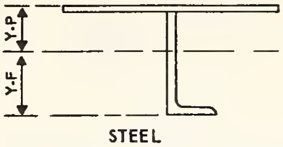
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	91.8	145.0	1,036.8	6.80	11.3	7.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	85.2	141.5	980.3	6.88	11.5	6.9	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	78.3	138.1	921.5	6.97	11.8	6.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	74.8	136.6	891.0	7.02	11.9	6.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	93.8	128.8	838.0	5.59	8.9	6.5	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	88.9	125.9	804.5	5.66	9.1	6.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	86.2	124.5	786.1	5.69	9.1	6.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	83.5	123.0	767.9	5.73	9.2	6.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	80.7	121.6	748.8	5.77	9.3	6.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	77.9	120.2	729.5	5.81	9.4	6.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	75.0	118.8	709.7	5.85	9.5	6.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	67.6	114.7	656.7	5.69	9.7	5.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	72.0	117.6	689.5	5.90	9.6	5.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	58.1	110.4	587.5	5.79	10.1	5.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	51.9	108.3	541.5	5.86	10.4	5.0	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	60.0	98.7	501.3	5.00	8.4	5.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	51.7	95.2	450.1	5.12	8.7	4.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	47.3	93.8	422.5	5.17	8.9	4.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	44.4	93.1	403.9	5.21	9.1	4.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	55.7	90.9	429.5	4.64	7.7	4.7	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	51.7	88.9	406.9	4.68	7.9	4.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	48.0	88.0	386.3	4.75	8.0	4.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	43.4	85.3	357.6	4.63	8.2	4.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	43.9	86.8	362.8	4.80	8.3	4.2	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	40.0	84.2	337.3	4.66	8.4	4.0	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	38.3	83.8	326.8	4.67	8.5	3.9	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	31.2	79.9	279.3	4.51	8.9	3.5	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.2	79.3	251.9	4.49	9.3	3.2	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	39.8	71.4	266.7	3.90	6.7	3.7	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	34.7	69.8	241.9	3.96	7.0	3.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	29.8	68.0	216.1	3.90	7.3	3.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	31.0	69.1	223.5	3.99	7.2	3.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.1	66.8	201.2	3.86	7.4	3.0	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	27.2	67.6	202.6	3.91	7.4	3.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	24.5	66.4	186.6	3.85	7.6	2.8	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.2	63.0	165.5	3.63	7.8	2.6	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.3	62.5	141.7	3.56	8.2	2.3	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	43.7	67.5	250.2	3.57	5.7	3.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	40.0	65.9	235.1	3.59	5.9	3.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	35.9	64.2	217.3	3.59	6.1	3.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	31.4	62.4	197.2	3.58	6.3	3.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	29.0	61.5	186.2	3.56	6.4	3.0	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	26.4	60.4	173.6	3.53	6.6	2.9	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	48.9	62.0	230.6	3.34	4.7	3.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	44.7	60.6	217.1	3.37	4.9	3.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	36.8	58.4	190.5	3.19	5.2	3.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	40.2	59.2	202.2	3.39	5.0	3.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	33.9	57.2	179.5	3.21	5.3	3.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	30.5	55.9	166.6	3.22	5.5	3.0	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	35.1	57.7	184.2	3.39	5.2	3.2	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	32.3	56.9	174.0	3.38	5.4	3.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	26.7	54.5	151.0	3.20	5.7	2.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	29.5	56.1	163.1	3.36	5.5	2.9	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE

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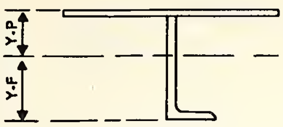
17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	24.7	53.8	142.6	3.18	5.8	2.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	26.4	55.1	150.6	3.33	5.7	2.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	22.5	52.9	133.0	3.15	5.9	2.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.2	52.0	122.8	3.11	6.1	2.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	28.1	48.7	132.7	2.83	4.7	2.7	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	25.3	47.8	123.1	2.83	4.9	2.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	22.2	46.7	112.1	2.81	5.0	2.4	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.5	46.1	105.7	2.79	5.1	2.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.7	45.5	98.6	2.76	5.3	2.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.9	44.8	91.1	2.72	5.4	2.0	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.8	43.9	82.3	2.66	5.6	1.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	22.7	40.5	93.5	2.44	4.1	2.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	20.5	39.8	87.0	2.44	4.3	2.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.1	39.1	79.5	2.42	4.4	2.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.7	38.7	75.0	2.40	4.5	1.9	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.2	38.1	70.0	2.37	4.6	1.8	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.9	37.3	65.3	2.32	4.7	1.7	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.7	37.6	64.7	2.34	4.7	1.7	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.6	37.2	60.6	2.30	4.8	1.6	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.1	36.9	58.6	2.28	4.8	1.6	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.0	36.0	54.3	2.21	4.9	1.5	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.9	36.2	53.9	2.22	4.9	1.5	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.3	36.0	51.7	2.20	5.0	1.4	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.5	35.2	48.0	2.13	5.1	1.4	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.8	34.0	40.8	2.02	5.2	1.2	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.4	31.4	53.8	2.00	3.7	1.7	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.8	30.9	49.2	1.98	3.8	1.6	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.9	30.2	43.4	1.93	4.0	1.4	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.8	29.4	39.9	1.87	4.1	1.4	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.8	29.8	40.2	1.89	4.1	1.3	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.8	28.9	36.7	1.83	4.2	1.3	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.7	29.2	36.3	1.84	4.2	1.2	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.8	28.4	33.3	1.78	4.3	1.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.4	28.4	32.0	1.77	4.3	1.1	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.7	27.6	29.3	1.71	4.4	1.1	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.1	27.4	27.3	1.67	4.4	1.0	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.5	26.5	24.8	1.61	4.5	0.9	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.9	24.6	35.5	1.65	3.0	1.4	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.5	24.3	32.5	1.63	3.1	1.3	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.5	23.7	30.2	1.59	3.2	1.3	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.4	23.0	27.4	1.53	3.2	1.2	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.0	23.8	29.0	1.59	3.2	1.2	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.1	23.2	26.6	1.54	3.3	1.1	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.1	23.5	26.8	1.56	3.3	1.1	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.2	22.5	24.3	1.49	3.4	1.1	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.3	22.8	24.6	1.51	3.4	1.1	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.5	22.1	22.4	1.46	3.4	1.0	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.2	23.0	24.3	1.52	3.4	1.1	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.5	22.3	22.3	1.47	3.4	1.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.8	21.7	20.3	1.41	3.5	0.9	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.1	22.3	21.4	1.46	3.5	1.0	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.6	21.8	19.8	1.41	3.5	0.9	2.25	4.00	3.50	0.312	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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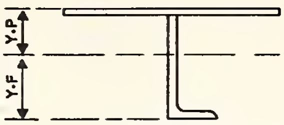
17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.0	21.0	17.9	1.35	3.6	0.9	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.1	21.5	18.3	1.38	3.6	0.9	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.6	20.8	16.7	1.33	3.6	0.8	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.1	20.1	15.2	1.27	3.7	0.8	1.69	4.00	3.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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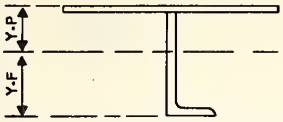
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	95.5	174.5	1,142.0	6.79	12.0	6.5	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	88.4	171.2	1,078.4	6.85	12.2	6.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	81.0	168.2	1,011.5	6.90	12.5	6.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	77.2	166.9	976.5	6.92	12.6	5.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	98.1	153.0	926.4	5.64	9.4	6.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	92.8	150.3	889.2	5.69	9.6	5.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	89.8	148.9	868.6	5.72	9.7	5.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	87.0	147.6	848.2	5.74	9.8	5.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	83.9	146.3	826.7	5.77	9.8	5.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	80.9	145.0	804.8	5.80	10.0	5.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	77.8	143.8	782.2	5.83	10.1	5.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	70.3	138.8	723.3	5.65	10.3	5.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	74.6	142.7	759.2	5.85	10.2	5.3	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	60.0	135.0	643.8	5.70	10.7	4.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	53.3	133.3	590.5	5.71	11.1	4.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	62.3	119.7	553.4	4.98	8.9	4.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	53.4	116.7	494.3	5.03	9.3	4.2	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	48.6	115.6	462.1	5.05	9.5	4.0	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	45.5	115.1	440.4	5.06	9.7	3.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	57.9	110.3	474.4	4.62	8.2	4.3	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	53.7	108.4	448.7	4.63	8.4	4.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	49.6	107.8	424.3	4.67	8.6	3.9	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	44.8	104.6	392.1	4.54	8.7	3.8	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	45.2	106.9	396.8	4.69	8.8	3.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	41.2	103.6	368.5	4.54	8.9	3.6	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	39.3	103.3	356.1	4.54	9.1	3.4	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.0	98.8	302.5	4.34	9.4	3.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.8	98.3	270.7	4.28	9.7	2.8	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	41.3	87.2	294.2	3.84	7.1	3.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	35.7	86.0	265.0	3.86	7.4	3.1	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	30.6	83.9	235.3	3.77	7.7	2.8	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	31.8	85.4	243.3	3.86	7.7	2.8	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.8	82.5	218.2	3.71	7.9	2.6	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	27.9	83.6	219.5	3.75	7.9	2.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.0	82.2	201.3	3.67	8.1	2.4	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.7	77.9	178.2	3.46	8.2	2.3	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.7	77.3	150.9	3.34	8.5	2.0	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	45.4	82.0	277.5	3.55	6.1	3.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	41.5	80.4	260.2	3.55	6.3	3.2	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	37.1	78.7	239.6	3.53	6.5	3.0	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	32.4	76.8	216.4	3.49	6.7	2.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	29.9	75.8	203.6	3.46	6.8	2.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.2	74.6	189.1	3.41	7.0	2.5	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	50.8	75.6	258.3	3.35	5.1	3.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	46.3	74.3	242.5	3.36	5.2	3.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	38.3	71.1	211.4	3.17	5.5	3.0	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	41.6	72.9	225.0	3.36	5.4	3.1	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	35.1	70.0	198.6	3.17	5.7	2.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	31.5	68.6	183.7	3.16	5.8	2.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	36.1	71.3	203.8	3.33	5.6	2.9	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	33.2	70.4	191.9	3.31	5.8	2.7	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	27.5	67.1	165.6	3.11	6.0	2.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	30.3	69.5	179.1	3.27	5.9	2.6	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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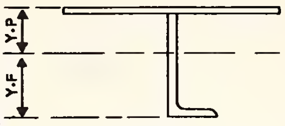
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		· LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	25.4	66.3	155.9	3.08	6.1	2.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.0	68.3	164.6	3.21	6.1	2.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.0	65.3	144.8	3.03	6.3	2.2	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.7	64.2	133.0	2.97	6.4	2.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	29.1	59.8	146.9	2.79	5.0	2.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	26.1	58.7	135.7	2.77	5.2	2.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	22.9	57.6	122.8	2.73	5.4	2.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.1	56.9	115.4	2.70	5.5	2.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.2	56.1	107.2	2.65	5.6	1.9	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.2	55.2	98.5	2.60	5.7	1.8	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.1	54.1	88.6	2.52	5.9	1.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	23.5	49.7	103.6	2.40	4.4	2.1	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.1	49.0	95.9	2.38	4.5	2.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.6	48.1	87.1	2.34	4.7	1.8	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.1	47.6	81.9	2.31	4.8	1.7	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.6	46.9	76.0	2.27	4.9	1.6	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.3	45.8	70.8	2.21	5.0	1.5	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.0	46.2	70.0	2.22	5.0	1.5	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.9	45.6	65.2	2.18	5.1	1.4	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.3	45.2	63.0	2.15	5.1	1.4	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.3	44.1	58.3	2.08	5.2	1.3	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.1	44.2	57.7	2.09	5.2	1.3	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.5	43.9	55.2	2.06	5.2	1.3	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.7	42.8	51.2	1.99	5.3	1.2	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.9	41.1	43.2	1.87	5.5	1.0	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.9	38.5	59.1	1.93	4.0	1.5	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.2	37.8	53.8	1.90	4.1	1.4	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.1	36.9	47.0	1.83	4.2	1.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.0	35.8	43.1	1.77	4.3	1.2	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.1	36.2	43.3	1.79	4.3	1.2	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.0	35.0	39.4	1.72	4.4	1.1	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.9	35.4	39.0	1.73	4.4	1.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.0	34.3	35.6	1.66	4.5	1.0	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.6	34.2	34.1	1.65	4.5	1.0	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.8	33.1	31.2	1.59	4.6	0.9	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.2	32.8	28.9	1.55	4.6	0.9	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.6	31.5	26.2	1.48	4.7	0.8	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.2	30.2	39.2	1.59	3.2	1.3	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.8	29.7	35.7	1.56	3.3	1.2	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.8	28.9	33.0	1.52	3.4	1.1	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.7	27.9	29.8	1.46	3.4	1.1	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.2	29.0	31.5	1.51	3.4	1.1	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.3	28.1	28.8	1.46	3.5	1.0	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.3	28.4	29.0	1.47	3.5	1.0	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.4	27.1	26.2	1.41	3.5	1.0	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.5	27.6	26.5	1.42	3.5	1.0	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.7	26.6	24.1	1.37	3.6	0.9	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.3	27.7	26.1	1.43	3.6	0.9	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.6	26.8	23.9	1.37	3.6	0.9	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.9	25.9	21.7	1.32	3.7	0.8	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.3	26.7	22.9	1.36	3.6	0.9	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.7	25.9	21.1	1.31	3.7	0.8	2.25	4.00	3.50	0.312	1.25



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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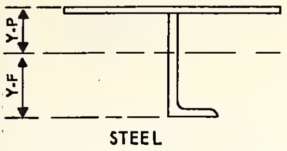
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.1	24.9	19.1	1.26	3.7	0.8	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.2	25.5	19.4	1.28	3.7	0.8	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.7	24.5	17.7	1.23	3.8	0.7	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.2	23.5	16.1	1.17	3.8	0.7	1.69	4.00	3.00	0.250	1.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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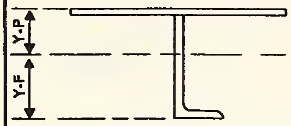
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	98.7	207.8	1,242.4	6.73	12.6	6.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	91.1	204.8	1,170.6	6.75	12.8	5.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	83.3	202.1	1,094.6	6.76	13.1	5.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	79.2	201.0	1,054.8	6.76	13.3	5.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	101.9	180.4	1,013.4	5.65	9.9	5.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	96.2	177.9	971.7	5.68	10.1	5.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	93.1	176.6	948.6	5.69	10.2	5.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	90.0	175.4	925.6	5.71	10.3	5.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	86.7	174.2	901.2	5.72	10.4	5.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	83.5	173.0	876.3	5.74	10.5	5.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	80.1	172.0	850.7	5.75	10.6	4.9	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	72.6	166.0	785.8	5.57	10.8	4.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	76.7	171.0	824.3	5.76	10.7	4.8	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	61.6	162.6	695.3	5.56	11.3	4.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	54.5	161.2	634.2	5.52	11.6	3.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	64.3	143.4	602.3	4.91	9.4	4.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	54.8	140.7	534.6	4.91	9.8	3.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	49.7	139.8	497.6	4.89	10.0	3.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	46.5	139.5	472.6	4.87	10.2	3.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	59.7	132.0	516.6	4.55	8.7	3.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	55.3	130.2	487.4	4.54	8.8	3.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	50.9	129.8	459.0	4.55	9.0	3.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	46.0	125.9	423.4	4.42	9.2	3.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	46.2	129.1	427.3	4.54	9.3	3.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	42.2	125.1	396.4	4.39	9.4	3.2	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	40.2	124.8	382.2	4.38	9.5	3.1	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.7	119.4	322.7	4.15	9.9	2.7	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.2	118.9	286.8	4.05	10.2	2.4	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	42.5	104.8	319.5	3.76	7.5	3.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	36.6	103.7	285.8	3.74	7.8	2.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.3	101.2	252.3	3.62	8.1	2.5	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	32.5	103.2	260.8	3.70	8.0	2.5	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.4	99.6	233.2	3.55	8.2	2.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.4	100.9	234.1	3.58	8.2	2.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.4	99.3	213.9	3.49	8.4	2.2	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	22.1	93.7	189.2	3.28	8.5	2.0	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.9	92.8	158.6	3.13	8.9	1.7	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	46.9	98.1	303.4	3.51	6.5	3.1	12.00	9.00	4.00	1.000	9.00
x 7/8 x 36.1 L	36.07	42.8	96.5	283.5	3.49	6.6	2.9	10.61	9.00	4.00	0.875	7.87
x 3/4 x 31.3 L	31.25	38.2	94.6	260.1	3.45	6.8	2.7	9.19	9.00	4.00	0.750	6.75
x 5/8 x 26.3 L	26.28	33.2	92.5	233.6	3.38	7.0	2.5	7.73	9.00	4.00	0.625	5.62
x 9/16 x 23.8 L	23.80	30.6	91.4	219.2	3.34	7.2	2.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.7	90.0	202.8	3.27	7.3	2.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	52.4	90.9	284.7	3.33	5.4	3.1	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	47.7	89.5	266.4	3.32	5.6	3.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	39.5	85.2	231.1	3.12	5.9	2.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	42.7	88.0	246.1	3.30	5.8	2.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	36.1	84.0	216.4	3.11	6.0	2.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	32.4	82.6	199.3	3.07	6.2	2.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	37.0	86.2	221.7	3.25	6.0	2.6	8.36	8.00	6.00	0.625	5.00
x 9/16 x 25.7 L	25.70	34.0	85.2	207.9	3.21	6.1	2.4	7.56	8.00	6.00	0.562	4.50



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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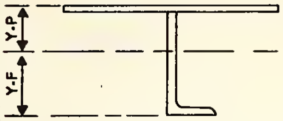
22.95# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 5/8 x 24.2 L	24.17	28.1	80.8	178.7	3.00	6.4	2.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	30.9	84.1	193.4	3.16	6.3	2.3	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	25.9	79.8	167.6	2.96	6.5	2.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.5	82.7	176.9	3.08	6.4	2.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.5	78.6	155.1	2.90	6.6	2.0	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	21.1	77.3	141.9	2.83	6.7	1.8	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.0	71.8	160.0	2.73	5.3	2.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	26.8	70.6	147.1	2.69	5.5	2.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.4	69.2	132.4	2.63	5.7	1.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.6	68.3	124.0	2.59	5.7	1.8	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.6	67.3	114.8	2.53	5.9	1.7	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.6	66.1	105.0	2.46	6.0	1.6	4.62	7.00	4.00	0.437	3.06
7 x 4 x 3/8 x 13.6 L	13.53	15.4	64.6	94.0	2.38	6.1	1.5	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.1	59.7	112.8	2.34	4.7	1.9	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.7	58.8	104.0	2.30	4.8	1.8	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.0	57.7	93.9	2.25	4.9	1.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.5	57.0	87.9	2.21	5.0	1.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.9	56.1	81.4	2.16	5.1	1.5	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.6	54.7	75.6	2.10	5.2	1.4	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.3	55.1	74.5	2.10	5.2	1.4	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	13.1	54.2	69.2	2.05	5.3	1.3	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.6	53.7	66.8	2.03	5.3	1.2	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.5	52.2	61.7	1.96	5.4	1.2	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.3	52.4	61.0	1.96	5.4	1.2	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.7	51.9	58.3	1.93	5.4	1.1	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.8	50.4	53.9	1.86	5.5	1.1	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	8.0	48.0	45.2	1.74	5.6	0.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	15.3	45.9	63.9	1.86	4.2	1.4	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.5	45.1	57.8	1.81	4.3	1.3	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.4	43.7	50.2	1.74	4.4	1.2	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.3	42.2	45.9	1.67	4.5	1.1	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.3	42.8	46.0	1.69	4.5	1.1	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.2	41.1	41.8	1.62	4.5	1.0	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	9.0	41.5	41.3	1.62	4.6	1.0	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.1	40.0	37.7	1.56	4.6	0.9	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.7	39.9	36.0	1.54	4.7	0.9	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	7.0	38.4	32.8	1.48	4.7	0.9	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.4	37.8	30.3	1.43	4.8	0.8	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.7	36.1	27.5	1.37	4.8	0.8	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.6	35.9	42.6	1.53	3.4	1.2	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	11.1	35.2	38.5	1.49	3.5	1.1	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	10.1	34.1	35.5	1.45	3.5	1.0	4.30	4.00	3.50	0.625	2.50
4 x 3 5/8 x 13.6 L	13.53	8.9	32.8	32.0	1.39	3.6	1.0	3.98	4.00	3.00	0.625	2.50
4 x 4 1/2 x 12.8 L	12.75	9.5	34.1	33.8	1.43	3.6	1.0	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.5	32.9	30.8	1.38	3.6	0.9	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.5	33.3	30.9	1.39	3.6	0.9	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.6	31.6	28.0	1.33	3.7	0.9	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.7	32.1	28.3	1.34	3.7	0.9	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.9	30.8	25.6	1.28	3.7	0.8	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.5	32.3	27.8	1.34	3.7	0.9	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.8	31.1	25.3	1.29	3.7	0.8	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	6.1	29.8	23.0	1.23	3.8	0.8	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.4	30.8	24.2	1.27	3.8	0.8	2.40	4.00	4.00	0.312	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
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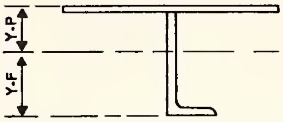
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.9	29.8	22.3	1.22	3.8	0.7	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	5.2	28.4	20.1	1.17	3.9	0.7	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.3	29.0	20.5	1.18	3.9	0.7	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.8	27.8	18.7	1.14	3.9	0.7	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.3	26.5	16.9	1.09	3.9	0.6	1.69	4.00	3.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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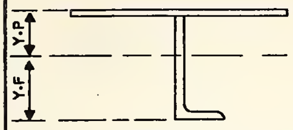
25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	101.4	243.7	1,334.0	6.63	13.2	5.5	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	93.4	241.0	1,253.6	6.62	13.4	5.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	85.1	238.6	1,168.4	6.59	13.7	4.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	80.9	237.7	1,123.7	6.57	13.9	4.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	105.2	210.1	1,095.1	5.61	10.4	5.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	99.1	207.7	1,048.6	5.63	10.6	5.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	95.8	206.5	1,022.6	5.64	10.7	5.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	92.5	205.3	996.8	5.64	10.8	4.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	89.1	204.2	969.4	5.64	10.9	4.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	85.6	203.2	941.4	5.64	11.0	4.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	82.1	202.2	912.5	5.64	11.1	4.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	74.4	195.3	842.2	5.46	11.3	4.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	78.5	201.4	882.7	5.64	11.2	4.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	62.9	192.0	740.5	5.39	11.8	3.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	55.5	190.7	672.0	5.32	12.1	3.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	66.0	168.7	646.4	4.81	9.8	3.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	55.9	166.2	570.0	4.76	10.2	3.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	50.7	165.4	528.3	4.72	10.4	3.2	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.2	165.2	500.2	4.68	10.6	3.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	61.3	155.3	554.6	4.46	9.1	3.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	56.6	153.4	522.0	4.43	9.2	3.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	51.9	153.1	489.6	4.42	9.4	3.2	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	47.0	148.5	450.9	4.28	9.6	3.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	47.0	152.5	453.7	4.38	9.7	3.0	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	43.0	147.7	420.5	4.23	9.8	2.8	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	38.4	142.2	381.7	4.07	9.9	2.7	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	41.0	147.3	404.6	4.20	9.9	2.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.3	140.9	339.8	3.96	10.2	2.4	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.6	140.1	300.1	3.83	10.5	2.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	43.6	123.4	342.0	3.66	7.9	2.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	37.3	122.2	303.9	3.60	8.1	2.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.8	119.2	266.8	3.47	8.4	2.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.0	121.7	275.7	3.54	8.4	2.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.8	117.2	245.8	3.38	8.5	2.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.8	118.8	246.6	3.41	8.5	2.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.8	116.7	224.4	3.31	8.7	1.9	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	48.1	115.2	326.8	3.44	6.8	2.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	43.9	113.5	304.5	3.41	6.9	2.7	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	39.0	111.3	278.2	3.35	7.1	2.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	33.9	108.9	248.6	3.26	7.3	2.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.2	107.5	232.6	3.21	7.5	2.2	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.2	105.8	214.6	3.13	7.6	2.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	53.8	107.1	308.8	3.28	5.7	2.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	48.8	105.6	288.0	3.26	5.9	2.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	40.5	100.1	248.9	3.06	6.1	2.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	43.6	103.9	264.9	3.22	6.1	2.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	37.0	98.8	232.2	3.03	6.3	2.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.1	97.1	213.0	2.98	6.4	2.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	37.7	101.8	237.3	3.15	6.3	2.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	34.6	100.5	221.9	3.09	6.4	2.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	28.7	94.9	190.0	2.89	6.6	2.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.4	99.1	205.7	3.03	6.5	2.1	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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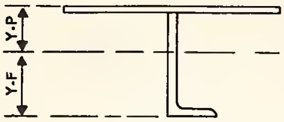
25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.4	93.7	177.7	2.84	6.7	1.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.0	97.4	187.4	2.95	6.7	1.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.0	92.2	164.0	2.77	6.8	1.8	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.4	90.4	149.5	2.69	7.0	1.7	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.7	84.3	171.6	2.65	5.6	2.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	27.4	82.9	157.2	2.60	5.7	1.9	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.9	81.1	140.8	2.52	5.9	1.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.0	80.0	131.4	2.47	6.0	1.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.9	78.6	121.3	2.41	6.1	1.5	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.9	77.0	110.6	2.34	6.2	1.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.6	74.9	98.6	2.24	6.3	1.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.7	70.0	121.1	2.26	4.9	1.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.2	68.8	111.1	2.22	5.0	1.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.4	67.4	99.8	2.15	5.1	1.5	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.8	66.4	93.2	2.11	5.2	1.4	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.2	65.1	86.0	2.05	5.3	1.3	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.6	63.7	78.5	1.99	5.4	1.2	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	12.8	61.8	70.1	1.91	5.5	1.1	3.61	6.00	4.00	0.375	2.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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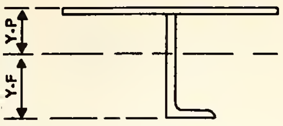
28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	103.8	283.2	1,419.3	6.49	13.7	5.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	95.4	280.6	1,330.0	6.45	13.9	4.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	86.7	278.4	1,235.4	6.40	14.3	4.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	82.3	277.5	1,185.9	6.36	14.4	4.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	108.1	242.7	1,173.2	5.55	10.9	4.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	101.7	240.4	1,121.4	5.55	11.0	4.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	98.2	239.2	1,092.4	5.55	11.1	4.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	94.8	238.1	1,063.6	5.54	11.2	4.5	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	91.2	237.1	1,033.1	5.53	11.3	4.4	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	87.5	236.1	1,001.8	5.52	11.4	4.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	83.8	235.2	969.5	5.51	11.6	4.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	76.1	227.0	894.1	5.32	11.7	3.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	80.1	234.4	936.3	5.49	11.7	4.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	64.0	223.8	781.2	5.21	12.2	3.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	56.4	222.5	705.5	5.11	12.5	3.2	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	67.5	196.1	687.0	4.69	10.2	3.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	56.9	193.5	602.0	4.60	10.6	3.1	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	51.4	192.7	555.7	4.53	10.8	2.9	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.9	192.5	524.6	4.48	11.0	2.7	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	62.6	180.3	589.8	4.35	9.4	3.3	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	57.8	178.4	553.6	4.31	9.6	3.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	52.9	178.1	517.2	4.27	9.8	2.9	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	47.9	172.6	475.6	4.13	9.9	2.8	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	47.7	177.5	477.3	4.20	10.0	2.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	43.7	171.6	442.0	4.06	10.1	2.6	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	39.1	165.1	400.7	3.90	10.3	2.4	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	41.6	171.2	424.5	4.02	10.2	2.5	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.7	163.3	354.9	3.77	10.5	2.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.0	162.0	311.8	3.62	10.8	1.9	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	44.5	143.2	362.6	3.55	8.2	2.5	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.0	141.8	320.1	3.46	8.4	2.3	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.3	137.9	279.7	3.31	8.7	2.0	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.4	141.0	289.0	3.38	8.6	2.0	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.2	135.4	257.1	3.22	8.8	1.9	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.2	137.2	257.5	3.24	8.8	1.9	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.1	134.5	233.7	3.13	9.0	1.7	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	49.3	133.5	348.6	3.36	7.1	2.6	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	44.8	131.6	323.8	3.31	7.2	2.5	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	39.8	129.1	294.7	3.24	7.4	2.3	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	34.5	126.1	262.2	3.14	7.6	2.1	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.7	124.4	244.7	3.07	7.7	2.0	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.7	122.2	225.0	2.99	7.8	1.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	55.0	124.5	331.4	3.22	6.0	2.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	49.8	122.8	308.0	3.18	6.2	2.5	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	41.5	115.9	265.3	2.98	6.4	2.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	44.4	120.8	282.2	3.13	6.4	2.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	37.8	114.4	246.8	2.93	6.5	2.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.8	112.3	225.5	2.87	6.7	2.0	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	38.3	118.2	251.5	3.04	6.6	2.1	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.1	116.6	234.6	2.98	6.7	2.0	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.2	109.6	200.3	2.77	6.9	1.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.9	114.8	216.7	2.91	6.8	1.9	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF
COMBINED BEAM AND PLATE
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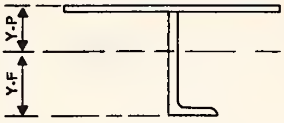
28.05# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.9	108.0	186.8	2.71	7.0	1.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.4	112.5	196.8	2.81	6.9	1.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.3	106.0	171.9	2.64	7.1	1.6	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.8	103.7	156.2	2.55	7.2	1.5	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	31.4	97.4	182.4	2.56	5.8	1.9	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.0	95.6	166.3	2.50	5.9	1.7	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.3	93.3	148.3	2.42	6.1	1.6	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.3	91.8	138.1	2.36	6.2	1.5	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.3	90.0	127.1	2.29	6.3	1.4	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.1	87.8	115.6	2.22	6.4	1.3	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.9	85.0	102.7	2.12	6.5	1.2	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.3	80.6	128.6	2.19	5.1	1.6	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.6	79.0	117.6	2.13	5.2	1.5	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.7	77.1	105.1	2.06	5.3	1.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.2	75.7	97.9	2.01	5.4	1.3	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.5	74.0	90.1	1.95	5.5	1.2	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.8	72.2	82.1	1.88	5.6	1.1	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	13.0	69.6	73.1	1.80	5.6	1.0	3.61	6.00	4.00	0.375	2.25



PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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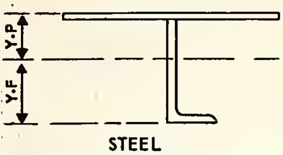
30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	105.8	324.6	1,495.8	6.34	14.1	4.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	97.0	322.0	1,397.8	6.27	14.4	4.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	88.0	319.9	1,294.3	6.19	14.7	4.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	83.4	319.0	1,240.2	6.14	14.9	3.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	110.6	277.0	1,245.1	5.47	11.3	4.5	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	104.0	274.8	1,187.9	5.45	11.4	4.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	100.3	273.6	1,155.9	5.44	11.5	4.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	96.7	272.5	1,124.2	5.42	11.6	4.1	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	92.9	271.4	1,090.5	5.40	11.7	4.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	89.1	270.5	1,056.0	5.38	11.8	3.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	85.3	269.6	1,020.4	5.36	12.0	3.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	77.5	260.1	940.3	5.17	12.1	3.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	81.4	268.8	983.9	5.33	12.1	3.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	65.0	256.5	816.9	5.03	12.6	3.2	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	57.1	255.0	734.5	4.90	12.9	2.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	68.7	224.4	723.3	4.56	10.5	3.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	57.8	221.6	630.0	4.43	10.9	2.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	52.1	220.6	579.5	4.35	11.1	2.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	48.4	220.2	545.7	4.28	11.3	2.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	63.8	206.3	621.2	4.23	9.7	3.0	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	58.7	204.1	581.6	4.17	9.9	2.8	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	53.6	203.7	541.4	4.12	10.1	2.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	48.6	197.2	497.3	3.97	10.2	2.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	48.4	202.8	497.9	4.04	10.3	2.5	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	44.3	195.9	460.7	3.90	10.4	2.4	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	39.6	188.1	417.2	3.73	10.5	2.2	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	42.1	195.3	441.7	3.85	10.5	2.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.2	185.6	367.8	3.59	10.8	2.0	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.3	183.4	321.8	3.43	11.0	1.8	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	45.2	163.4	380.8	3.43	8.4	2.3	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.5	161.4	334.3	3.32	8.7	2.1	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.7	156.5	291.0	3.16	8.9	1.9	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.9	160.1	300.4	3.23	8.9	1.9	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.6	153.3	266.8	3.07	9.0	1.7	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.6	155.3	267.0	3.08	9.0	1.7	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.4	151.8	241.8	2.97	9.2	1.6	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	50.2	152.2	368.2	3.27	7.3	2.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	45.6	150.0	341.0	3.21	7.5	2.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	40.5	147.0	309.3	3.12	7.6	2.1	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	35.0	143.3	274.1	3.01	7.8	1.9	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	32.1	141.1	255.3	2.94	7.9	1.8	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.1	138.3	234.2	2.85	8.1	1.7	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	56.0	142.4	351.9	3.15	6.3	2.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	50.7	140.4	326.0	3.10	6.4	2.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	42.3	131.9	280.1	2.89	6.6	2.1	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	45.1	138.0	297.6	3.03	6.6	2.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	38.5	130.0	259.8	2.84	6.8	2.0	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	34.3	127.6	236.6	2.77	6.9	1.9	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	38.9	134.7	264.1	2.93	6.8	2.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.6	132.6	245.7	2.86	6.9	1.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.6	124.1	209.3	2.66	7.1	1.7	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.3	130.3	226.4	2.78	7.0	1.7	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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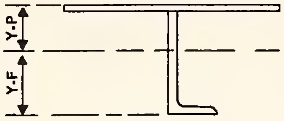
30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 9/16 x 21.9 L	21.86	27.2	122.1	194.9	2.60	7.2	1.6	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.7	127.3	205.0	2.69	7.1	1.6	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.7	119.4	178.8	2.52	7.3	1.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.0	116.4	162.2	2.43	7.4	1.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	31.9	110.4	191.9	2.47	6.0	1.7	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.4	108.1	174.5	2.40	6.1	1.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.7	105.1	155.0	2.31	6.3	1.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.7	103.2	144.0	2.25	6.4	1.4	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.5	100.8	132.3	2.18	6.4	1.3	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.4	98.0	120.0	2.10	6.5	1.2	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	16.1	94.4	106.4	2.00	6.6	1.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.7	90.9	135.4	2.11	5.3	1.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	23.0	88.9	123.4	2.05	5.4	1.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.1	86.4	109.9	1.97	5.5	1.3	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.4	84.6	102.2	1.92	5.5	1.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.7	82.4	93.9	1.86	5.6	1.1	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.0	79.9	85.3	1.79	5.7	1.1	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	13.1	76.6	75.7	1.70	5.8	1.0	3.61	6.00	4.00	0.375	2.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

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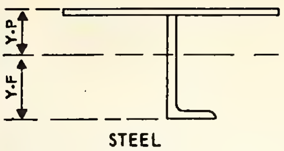
35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	109.1	414.4	1,629.5	5.99	14.9	3.9	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	99.7	411.3	1,515.1	5.89	15.2	3.7	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	90.2	408.6	1,394.9	5.77	15.5	3.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	85.4	407.4	1,332.3	5.70	15.6	3.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	114.9	351.7	1,374.6	5.26	12.0	3.9	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	107.7	349.2	1,306.6	5.21	12.1	3.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	103.8	347.9	1,268.7	5.18	12.2	3.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	99.9	346.7	1,231.2	5.15	12.3	3.6	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	95.9	345.4	1,191.4	5.12	12.4	3.4	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	91.8	344.2	1,150.7	5.08	12.5	3.3	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	87.7	343.1	1,108.9	5.04	12.6	3.2	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	79.8	330.5	1,020.6	4.86	12.8	3.1	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	83.6	342.0	1,066.0	4.99	12.8	3.1	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	66.6	325.3	877.6	4.66	13.2	2.7	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	58.3	322.2	783.3	4.50	13.4	2.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	70.8	284.5	786.5	4.28	11.1	2.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	59.2	280.1	677.9	4.11	11.5	2.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	53.2	277.9	619.8	4.00	11.6	2.2	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	49.4	276.6	581.1	3.92	11.8	2.1	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	65.7	260.8	676.1	3.97	10.3	2.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	60.4	257.8	630.2	3.89	10.4	2.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	55.0	256.6	583.1	3.81	10.6	2.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	49.9	247.6	534.6	3.67	10.7	2.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	49.4	254.5	532.9	3.71	10.8	2.1	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	45.3	245.1	492.7	3.58	10.9	2.0	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	40.6	234.5	445.4	3.42	11.0	1.9	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	43.0	243.8	471.1	3.52	10.9	1.9	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.9	229.5	389.9	3.26	11.2	1.7	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.8	224.4	338.7	3.09	11.4	1.5	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	46.6	204.6	412.6	3.19	8.9	2.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	39.5	200.7	358.7	3.06	9.1	1.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.5	192.9	310.3	2.89	9.3	1.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.6	197.6	320.1	2.94	9.3	1.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	30.3	187.9	283.6	2.79	9.4	1.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	30.2	190.1	283.3	2.80	9.4	1.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.9	184.5	255.6	2.68	9.5	1.4	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	51.9	191.0	402.9	3.07	7.8	2.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	47.0	187.7	371.3	3.00	7.9	2.0	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	41.6	183.1	334.9	2.90	8.0	1.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	35.9	177.4	294.8	2.77	8.2	1.7	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	33.0	173.8	273.6	2.70	8.3	1.6	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.8	169.4	250.0	2.60	8.4	1.5	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	57.9	179.6	388.4	2.98	6.7	2.2	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	52.2	176.6	357.8	2.92	6.8	2.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	43.7	164.6	306.5	2.71	7.0	1.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	46.4	172.9	324.6	2.83	7.0	1.9	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	39.7	161.7	282.8	2.65	7.1	1.7	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	35.3	157.8	256.1	2.56	7.3	1.6	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	39.9	167.6	286.0	2.71	7.2	1.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	36.5	164.3	265.0	2.63	7.3	1.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	30.4	152.2	225.2	2.44	7.4	1.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	33.0	160.5	243.2	2.55	7.4	1.5	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF
COMBINED BEAM AND PLATE
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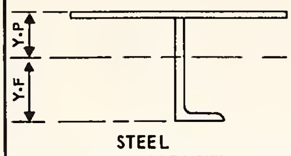
35.7# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	28.0	149.0	208.9	2.37	7.5	1.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	29.4	155.6	219.3	2.45	7.5	1.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.3	144.8	191.1	2.29	7.6	1.3	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	22.6	140.0	172.6	2.20	7.6	1.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	33.0	136.2	209.0	2.30	6.3	1.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	29.3	132.5	189.0	2.22	6.4	1.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	25.4	127.7	166.9	2.12	6.6	1.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.3	124.5	154.6	2.06	6.6	1.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	21.1	120.7	141.5	1.99	6.7	1.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.9	116.4	127.9	1.91	6.8	1.1	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	26.6	111.0	147.7	1.96	5.5	1.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	23.8	107.7	133.9	1.89	5.6	1.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.7	103.5	118.6	1.80	5.7	1.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	19.0	100.7	110.0	1.75	5.8	1.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.2	97.3	100.7	1.69	5.8	1.0	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.5	93.5	91.2	1.62	5.9	1.0	4.18	6.00	4.00	0.437	2.62

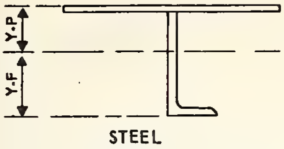


PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	111.7	509.9	1,740.3	5.64	15.6	3.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	101.9	505.5	1,611.2	5.51	15.8	3.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	92.0	501.2	1,476.3	5.37	16.1	2.9	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	86.9	499.0	1,406.5	5.28	16.2	2.8	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	118.3	431.8	1,485.6	5.01	12.6	3.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	110.7	428.6	1,407.6	4.95	12.7	3.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	106.5	426.9	1,364.1	4.91	12.8	3.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	102.5	425.1	1,321.1	4.87	12.9	3.1	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	98.2	423.3	1,275.8	4.82	13.0	3.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	94.0	421.6	1,229.5	4.77	13.1	2.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	89.7	419.8	1,182.1	4.72	13.2	2.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	81.7	403.6	1,087.1	4.54	13.3	2.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	85.3	418.0	1,133.6	4.66	13.3	2.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	67.9	395.0	927.1	4.31	13.7	2.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	59.3	388.9	822.8	4.14	13.9	2.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	72.5	346.0	839.1	4.00	11.6	2.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	60.4	338.4	717.2	3.81	11.9	2.1	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	54.2	334.0	652.7	3.68	12.0	2.0	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	50.2	331.0	610.0	3.59	12.2	1.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	67.4	316.3	722.0	3.72	10.7	2.3	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	61.8	311.7	670.6	3.63	10.8	2.2	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	56.1	308.9	617.5	3.53	11.0	2.0	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	51.0	297.1	565.4	3.40	11.1	1.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	50.3	304.6	561.7	3.42	11.2	1.8	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	46.2	292.5	519.1	3.29	11.2	1.8	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	41.4	278.5	468.8	3.14	11.3	1.7	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	43.9	289.9	495.3	3.24	11.3	1.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	35.5	269.9	408.2	2.98	11.5	1.5	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.3	260.5	352.8	2.81	11.6	1.4	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	47.7	244.8	439.4	2.97	9.2	1.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	40.3	237.8	379.3	2.82	9.4	1.6	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	34.2	226.2	326.7	2.65	9.6	1.4	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	35.3	231.9	336.7	2.70	9.5	1.5	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	30.9	218.9	297.8	2.55	9.6	1.4	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	30.8	221.1	297.2	2.55	9.7	1.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.4	212.7	267.4	2.44	9.7	1.3	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	53.3	229.6	432.6	2.88	8.1	1.9	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	48.2	224.5	397.1	2.80	8.2	1.8	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	42.6	217.7	356.6	2.69	8.4	1.6	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	36.7	209.1	312.5	2.56	8.5	1.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	33.7	203.8	289.2	2.48	8.6	1.4	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.4	197.3	263.6	2.39	8.7	1.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	59.4	217.0	419.9	2.81	7.1	1.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	53.6	212.3	385.1	2.74	7.2	1.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	44.9	196.5	329.2	2.54	7.3	1.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	47.5	206.7	347.6	2.64	7.3	1.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	40.8	192.0	302.6	2.47	7.4	1.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	36.2	186.0	272.9	2.37	7.5	1.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	40.8	198.7	304.7	2.51	7.5	1.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	37.3	193.7	281.5	2.43	7.5	1.5	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	31.2	177.8	238.9	2.25	7.7	1.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	33.8	188.0	257.6	2.35	7.6	1.4	6.75	8.00	6.00	0.500	4.00



PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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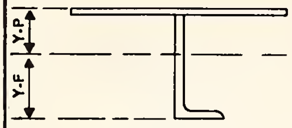
40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	28.6	173.0	221.1	2.18	7.7	1.3	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	30.0	180.8	231.6	2.25	7.7	1.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.9	166.9	201.8	2.10	7.8	1.2	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	23.1	160.0	181.8	2.01	7.9	1.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	33.9	160.2	224.0	2.14	6.6	1.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	30.1	154.6	201.7	2.06	6.7	1.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	26.1	147.5	177.4	1.95	6.8	1.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.9	142.9	164.0	1.89	6.9	1.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	21.7	137.5	149.8	1.82	6.9	1.1	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.4	131.4	135.2	1.74	7.0	1.0	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	27.5	129.2	158.7	1.82	5.8	1.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	24.5	124.3	143.4	1.75	5.8	1.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	21.3	118.2	126.6	1.66	5.9	1.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	19.6	114.1	117.1	1.61	6.0	1.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.8	109.4	107.1	1.55	6.0	1.0	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	16.0	104.2	96.8	1.48	6.1	0.9	4.18	6.00	4.00	0.437	2.62



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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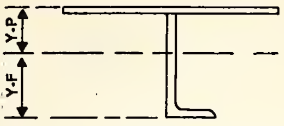
45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	113.8	607.5	1,833.2	5.30	16.1	3.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	103.7	600.8	1,691.2	5.16	16.3	2.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	93.4	593.6	1,543.7	5.00	16.5	2.6	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	88.2	589.7	1,467.7	4.91	16.6	2.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	121.1	514.5	1,581.2	4.76	13.1	3.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	113.2	510.0	1,493.9	4.68	13.2	2.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	108.9	507.5	1,445.4	4.64	13.3	2.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	104.6	504.9	1,397.6	4.59	13.4	2.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	100.2	502.1	1,347.3	4.54	13.4	2.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	95.8	499.3	1,296.0	4.48	13.5	2.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	91.3	496.4	1,243.7	4.42	13.6	2.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	83.3	476.1	1,143.1	4.25	13.7	2.4	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	86.8	493.3	1,190.4	4.36	13.7	2.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	69.0	462.1	968.6	4.00	14.0	2.1	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	60.1	451.6	855.8	3.82	14.2	1.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	74.0	406.3	884.0	3.75	11.9	2.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	61.4	393.7	750.6	3.53	12.2	1.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	55.1	386.1	680.6	3.40	12.4	1.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	50.9	380.6	634.6	3.31	12.5	1.7	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	68.8	370.3	761.5	3.48	11.1	2.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	63.1	363.4	705.2	3.39	11.2	1.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	57.2	358.1	646.9	3.28	11.3	1.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	51.9	343.0	591.9	3.15	11.4	1.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	51.2	350.6	586.3	3.16	11.5	1.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	47.1	335.6	541.8	3.04	11.5	1.6	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	42.2	318.1	489.0	2.90	11.6	1.5	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	44.6	331.5	516.2	2.99	11.6	1.6	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	36.2	304.7	424.2	2.74	11.7	1.4	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.8	290.3	365.5	2.57	11.9	1.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	48.8	282.1	462.9	2.77	9.5	1.6	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	41.1	270.9	397.4	2.61	9.7	1.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	34.9	254.9	341.3	2.44	9.8	1.3	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	35.9	261.5	351.5	2.48	9.8	1.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	31.5	245.0	310.6	2.35	9.9	1.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	31.4	247.0	309.6	2.35	9.9	1.3	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	28.0	235.7	278.2	2.24	9.9	1.2	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	54.6	266.0	458.8	2.71	8.4	1.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	49.4	258.8	419.8	2.62	8.5	1.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	43.6	249.2	375.8	2.51	8.6	1.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	37.6	237.1	328.2	2.37	8.7	1.4	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	34.4	229.8	303.3	2.29	8.8	1.3	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	31.1	220.8	276.0	2.20	8.9	1.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	60.9	252.8	447.7	2.65	7.4	1.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	54.8	246.0	409.2	2.57	7.5	1.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	46.1	225.9	349.5	2.38	7.6	1.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	48.6	237.8	368.1	2.47	7.6	1.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	41.8	219.5	320.3	2.30	7.7	1.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	37.1	211.1	288.1	2.21	7.8	1.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	41.7	226.5	321.4	2.33	7.7	1.4	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	38.1	219.5	296.4	2.26	7.8	1.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	32.0	199.7	251.4	2.09	7.9	1.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	34.5	211.6	270.7	2.17	7.8	1.3	6.75	8.00	6.00	0.500	4.00



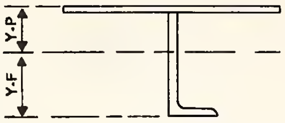
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

40t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	29.3	193.1	232.4	2.02	7.9	1.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	30.7	201.8	242.9	2.07	7.9	1.2	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	26.5	185.0	211.7	1.94	8.0	1.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	23.7	175.9	190.6	1.85	8.0	1.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	34.9	181.5	237.7	2.00	6.8	1.3	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	31.0	173.7	213.5	1.91	6.9	1.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	26.8	164.0	187.3	1.81	7.0	1.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	24.6	158.0	173.0	1.75	7.0	1.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	22.3	150.9	157.8	1.68	7.1	1.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	20.0	143.0	142.3	1.61	7.1	1.0	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	28.4	144.8	169.1	1.70	6.0	1.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	25.3	138.2	152.5	1.63	6.0	1.1	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	22.0	130.0	134.3	1.54	6.1	1.0	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	20.3	124.9	124.2	1.49	6.1	1.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	18.4	118.9	113.5	1.43	6.2	1.0	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	16.5	112.3	102.6	1.37	6.2	0.9	4.18	6.00	4.00	0.437	2.62



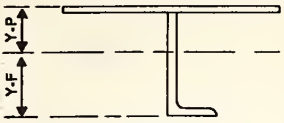
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

40t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	115.7	704.9	1,912.9	4.98	16.5	2.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	105.3	694.7	1,759.7	4.83	16.7	2.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	94.7	683.2	1,601.3	4.66	16.9	2.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	89.4	676.8	1,520.1	4.57	17.0	2.2	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	123.6	598.0	1,664.9	4.52	13.5	2.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	115.4	591.5	1,569.2	4.43	13.6	2.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	110.9	587.7	1,516.3	4.38	13.7	2.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	106.5	583.9	1,464.1	4.33	13.7	2.5	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	102.0	579.7	1,409.4	4.27	13.8	2.4	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	97.4	575.4	1,353.8	4.21	13.9	2.4	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	92.8	570.7	1,297.2	4.14	14.0	2.3	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	84.7	546.1	1,191.9	3.98	14.1	2.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	88.2	565.8	1,239.7	4.07	14.1	2.2	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	70.1	524.8	1,004.8	3.73	14.3	1.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	61.0	508.5	884.9	3.54	14.5	1.7	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	75.3	463.6	923.4	3.51	12.3	2.0	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	62.4	444.5	780.1	3.29	12.5	1.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	55.9	432.8	705.5	3.16	12.6	1.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	51.7	424.3	656.6	3.07	12.7	1.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	70.1	421.1	796.5	3.26	11.4	1.9	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	64.2	411.4	736.0	3.17	11.5	1.8	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	58.2	402.7	673.3	3.06	11.6	1.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	52.9	384.2	615.7	2.93	11.6	1.6	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	52.0	391.4	608.6	2.94	11.7	1.6	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	47.9	373.4	562.4	2.83	11.7	1.5	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	43.0	352.3	507.6	2.69	11.8	1.4	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	45.4	367.4	535.2	2.77	11.8	1.5	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25 0 C	20.55	36.8	333.7	439.2	2.53	11.9	1.3	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.3	313.9	377.5	2.37	12.0	1.2	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	42.0	299.4	414.1	2.43	9.9	1.4	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	35.8	269.7	355.2	2.25	9.9	1.3	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	36.6	286.0	365.3	2.30	10.0	1.3	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	30.5	252.9	306.3	2.11	10.0	1.2	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	32.0	267.9	321.6	2.17	10.0	1.2	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	28.6	253.6	288.7	2.07	10.1	1.1	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	25.2	232.4	256.0	1.95	10.1	1.1	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	44.6	276.9	393.7	2.34	8.8	1.4	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	38.4	261.0	343.0	2.21	8.9	1.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	35.2	251.5	316.7	2.13	9.0	1.3	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	31.8	240.1	287.9	2.05	9.1	1.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	62.3	286.1	473.1	2.50	7.6	1.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	56.1	276.8	431.3	2.41	7.7	1.6	11.48	8.00	6.00	0.875	7.00
8 x 4 1 x 37.4 L	37.40	47.3	252.5	368.5	2.24	7.8	1.5	11.00	8.00	4.00	1.000	8.00
8 x 6 3/4 x 33.8 L	33.80	49.7	265.6	387.0	2.31	7.8	1.5	9.94	8.00	6.00	0.750	6.00
8 x 4 7/8 x 33.1 L	33.08	42.8	243.7	337.0	2.16	7.9	1.4	9.73	8.00	4.00	0.875	7.00
8 x 4 3/4 x 28.7 L	28.70	38.1	232.7	302.5	2.07	7.9	1.3	8.44	8.00	4.00	0.750	6.00
8 x 6 5/8 x 28.5 L	28.42	42.6	250.6	337.1	2.18	7.9	1.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	39.0	241.4	310.5	2.11	8.0	1.3	7.56	8.00	6.00	0.562	4.50
8 x 4 5/8 x 24.2 L	24.17	32.8	218.0	263.5	1.95	8.0	1.2	7.11	8.00	4.00	0.625	5.00
8 x 6 1/2 x 23.0 L	22.95	35.3	231.2	283.2	2.02	8.0	1.2	6.75	8.00	6.00	0.500	4.00
8 x 4 9/16 x 21.9 L	21.86	30.1	209.6	243.4	1.88	8.1	1.2	6.43	8.00	4.00	0.562	4.50
8 x 6 7/16 x 20.2 L	20.16	31.4	218.8	253.9	1.93	8.1	1.2	5.93	8.00	6.00	0.437	3.50
8 x 4 1/2 x 19.6 L	19.55	27.2	199.6	221.6	1.80	8.1	1.1	5.75	8.00	4.00	0.500	4.00

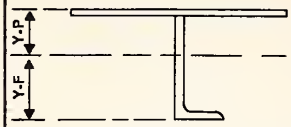


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
8 x 4 x 7/16 x 17.2 L	17.20	24.3	188.3	199.4	1.72	8.2	1.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	35.9	199.9	250.9	1.88	7.0	1.3	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	31.9	189.9	225.1	1.79	7.1	1.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	27.6	177.6	197.2	1.69	7.1	1.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	25.3	170.1	182.0	1.63	7.2	1.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	23.0	161.5	166.0	1.57	7.2	1.0	5.25	7.00	4.00	0.500	3.50

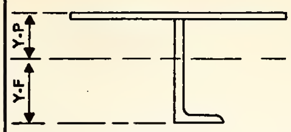


STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
⊏-L AND L

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	117.4	798.3	1,982.5	4.68	16.9	2.5	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	106.7	783.4	1,819.5	4.53	17.1	2.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	95.9	766.4	1,651.8	4.36	17.2	2.2	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	90.5	756.9	1,566.1	4.27	17.3	2.1	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	125.9	679.1	1,738.9	4.28	13.8	2.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	117.4	669.9	1,635.8	4.19	13.9	2.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	112.8	664.6	1,578.9	4.14	14.0	2.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	108.3	659.1	1,523.0	4.08	14.1	2.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	103.6	653.1	1,464.4	4.02	14.1	2.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	98.9	646.8	1,405.0	3.96	14.2	2.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	94.2	640.0	1,344.6	3.89	14.3	2.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	86.1	610.6	1,235.3	3.74	14.4	2.0	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	89.5	632.8	1,283.4	3.82	14.3	2.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	71.1	580.6	1,037.4	3.48	14.6	1.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	61.8	557.7	911.3	3.30	14.7	1.6	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	76.6	515.8	959.1	3.30	12.5	1.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	63.4	488.9	807.1	3.08	12.7	1.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	56.8	472.6	728.5	2.95	12.8	1.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	52.5	460.7	677.1	2.86	12.9	1.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	71.4	467.0	828.3	3.07	11.6	1.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	65.4	454.0	764.2	2.97	11.7	1.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	59.1	441.5	697.6	2.86	11.8	1.6	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	53.8	419.6	637.9	2.75	11.9	1.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	52.9	425.9	629.3	2.74	11.9	1.5	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	48.7	405.1	581.8	2.64	11.9	1.4	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	43.8	380.5	525.2	2.51	12.0	1.4	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	46.2	397.1	553.3	2.58	12.0	1.4	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	37.5	356.6	453.7	2.36	12.1	1.3	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.9	331.6	389.5	2.20	12.2	1.2	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	42.8	323.0	430.3	2.27	10.0	1.3	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	36.6	289.7	369.8	2.11	10.1	1.3	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	37.4	305.5	379.0	2.15	10.1	1.2	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	31.3	268.9	318.6	1.97	10.2	1.2	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	32.7	284.1	333.6	2.03	10.2	1.2	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	29.2	267.1	299.5	1.93	10.3	1.1	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	25.9	244.0	266.1	1.82	10.3	1.1	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	45.6	300.4	410.9	2.20	9.0	1.4	9.19	9.00	4.00	0.750	6.75
x 5/8 x 26.3 L	26.28	39.3	280.6	357.6	2.07	9.1	1.3	7.73	9.00	4.00	0.625	5.62
x 9/16 x 23.8 L	23.80	36.1	269.1	330.0	2.00	9.1	1.2	7.00	9.00	4.00	0.562	5.06
x 1/2 x 21.3 L	21.25	32.6	255.3	299.9	1.91	9.2	1.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	63.7	315.9	497.0	2.37	7.8	1.6	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	57.4	303.8	452.3	2.28	7.9	1.5	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	48.5	275.5	386.7	2.11	8.0	1.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	50.8	289.5	405.2	2.18	8.0	1.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	43.9	264.4	353.3	2.03	8.0	1.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	39.0	250.6	316.7	1.94	8.1	1.3	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	43.6	270.7	352.3	2.05	8.1	1.3	8.36	8.00	6.00	0.625	5.00
x 9/16 x 25.7 L	25.70	39.9	259.5	324.3	1.97	8.1	1.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	33.7	232.9	275.7	1.83	8.2	1.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	36.2	247.1	295.8	1.90	8.2	1.2	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	30.9	222.8	254.6	1.76	8.2	1.1	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	32.2	232.3	265.0	1.80	8.2	1.1	5.93	8.00	6.00	0.437	3.50



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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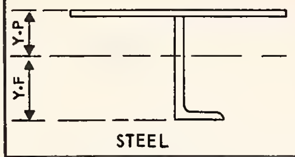
56.1# PLATE WEIGHT

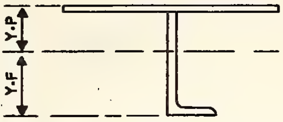
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 1/2 x 19.6 L	19.55	28.0	210.9	231.9	1.69	8.3	1.1	5.75	8.00	4.00	0.500	4.00
x 7/16 x 17.2 L	17.20	25.1	197.9	208.7	1.61	8.3	1.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	36.9	215.4	264.1	1.77	7.1	1.2	8.86	7.00	4.00	0.875	6.12
x 3/4 x 26.2 L	26.15	32.8	203.2	236.8	1.69	7.2	1.2	7.69	7.00	4.00	0.750	5.25
x 5/8 x 22.1 L	22.03	28.5	188.5	207.4	1.59	7.3	1.1	6.48	7.00	4.00	0.625	4.37
x 9/16 x 20.0 L	19.96	26.2	179.7	191.5	1.53	7.3	1.1	5.87	7.00	4.00	0.562	3.93
x 1/2 x 17.9 L	17.85	23.8	169.8	174.8	1.47	7.3	1.0	5.25	7.00	4.00	0.500	3.50



PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	118.9	836.1	2,045.0	4.42	17.2	2.3	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	108.1	865.6	1,873.5	4.26	17.3	2.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	97.1	842.0	1,697.6	4.09	17.5	2.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	91.6	829.9	1,607.9	4.00	17.6	1.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	128.0	756.7	1,806.1	4.07	14.1	2.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	119.3	744.2	1,696.3	3.97	14.2	2.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	114.6	736.9	1,635.8	3.92	14.3	2.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	110.0	729.4	1,576.5	3.86	14.3	2.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	105.2	721.2	1,514.5	3.80	14.4	2.1	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	100.4	712.5	1,451.7	3.74	14.5	2.0	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	95.6	703.2	1,388.1	3.67	14.5	2.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	87.4	669.2	1,275.3	3.52	14.6	1.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	90.7	693.3	1,323.6	3.60	14.6	1.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	72.1	629.4	1,067.9	3.27	14.8	1.7	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	77.9	562.4	992.4	3.11	12.7	1.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	64.5	527.1	832.8	2.89	12.9	1.6	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	72.7	507.7	858.4	2.90	11.8	1.7	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	66.5	491.2	791.0	2.80	11.9	1.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	60.2	474.6	721.0	2.69	12.0	1.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	54.8	449.4	659.4	2.58	12.0	1.5	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	52.0	368.9	524.5	2.29	10.1	1.4	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	58.5	355.1	527.5	2.27	9.0	1.5	12.00	9.00	4.00	1.000	9.00
x 7/8 x 36.1 L	36.07	52.9	339.6	480.4	2.19	9.1	1.4	10.61	9.00	4.00	0.875	7.87
x 3/4 x 31.3 L	31.25	46.7	320.1	428.1	2.08	9.2	1.3	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	65.2	342.4	520.4	2.25	8.0	1.5	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	58.7	327.4	473.0	2.16	8.1	1.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	49.8	295.4	404.9	2.00	8.1	1.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	52.0	309.9	423.3	2.06	8.1	1.4	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	45.1	282.0	369.7	1.93	8.2	1.3	9.73	8.00	4.00	0.875	7.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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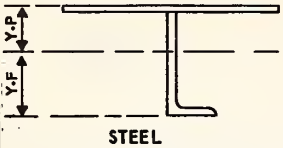
71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	122.0	1,037.9	2,156.2	3.96	17.7	2.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	110.8	1,004.2	1,970.4	3.81	17.8	2.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	99.5	965.8	1,780.9	3.65	17.9	1.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	93.8	944.5	1,684.8	3.56	18.0	1.8	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	132.0	894.7	1.926.4	3.69	14.6	2.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	122.9	874.2	1,805.2	3.59	14.7	2.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	118.0	862.3	1,738.8	3.54	14.7	2.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	113.2	850.1	1,673.7	3.48	14.8	2.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	108.3	836.8	1,605.9	3.42	14.8	1.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	103.3	822.8	1,537.4	3.36	14.9	1.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	98.3	807.8	1,468.1	3.29	14.9	1.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	90.1	764.9	1,349.7	3.16	15.0	1.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	93.3	791.9	1,398.3	3.22	15.0	1.8	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	74.3	704.5	1,126.2	2.92	15.2	1.6	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	80.6	637.4	1,055.9	2.80	13.1	1.7	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	66.7	585.2	883.4	2.59	13.2	1.5	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	75.4	572.9	916.7	2.61	12.1	1.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	69.1	549.3	843.7	2.51	12.2	1.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	62.5	524.5	767.8	2.41	12.3	1.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	57.0	493.9	703.1	2.31	12.3	1.4	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	54.6	406.6	565.6	2.07	10.4	1.4	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	61.5	396.5	572.4	2.06	9.3	1.4	12.00	9.00	4.00	1.000	9.00
x 7/8 x 36.1 L	36.07	55.7	375.7	521.1	1.98	9.4	1.4	10.61	9.00	4.00	0.875	7.87
x 3/4 x 31.3 L	31.25	49.3	350.4	464.7	1.88	9.4	1.3	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	68.6	385.5	567.5	2.05	8.3	1.5	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	61.8	365.2	515.5	1.96	8.3	1.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	52.8	327.2	443.3	1.82	8.4	1.4	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	54.9	342.0	461.3	1.87	8.4	1.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	48.0	309.7	404.9	1.75	8.4	1.3	9.73	8.00	4.00	0.875	7.00



PROPERTIES OF COMBINED BEAM AND PLATE ⊏-L AND L

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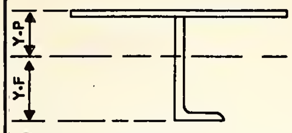
81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	125.2	1,155.5	2,258.8	3.60	18.0	2.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	113.6	1,107.8	2,061.5	3.45	18.1	1.9	13.01	18.00	4.10	0.625	10.80
15 x 4 x 75.0 C	64.99	136.1	1,006.8	2,037.6	3.37	15.0	2.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	126.7	977.5	1,907.0	3.28	15.0	2.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	121.6	960.6	1,835.5	3.22	15.1	1.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	116.7	943.5	1,765.7	3.17	15.1	1.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	111.6	924.8	1,693.1	3.11	15.2	1.8	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	106.5	905.3	1,619.9	3.05	15.2	1.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	101.4	884.6	1,546.0	2.99	15.3	1.7	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	93.0	834.4	1,423.0	2.87	15.3	1.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	96.2	862.9	1,471.6	2.92	15.3	1.7	12.16	15.00	4.00	0.797	9.37
13 x 4 x 50.0 C	41.96	83.8	691.5	1,120.6	2.55	13.4	1.6	12.34	13.00	4.41	0.610	10.23
12 x 4 x 50.0 C	41.60	78.6	619.9	977.0	2.38	12.4	1.6	12.24	12.00	4.13	0.700	10.02
9 x 4 x 1 x 40.8 L	40.80	65.2	427.9	622.0	1.90	9.5	1.5	12.00	9.00	4.00	1.000	9.00
8 x 6 x 1 x 44.2 L	44.20	72.6	419.0	618.9	1.89	8.5	1.5	13.00	8.00	6.00	1.000	8.00

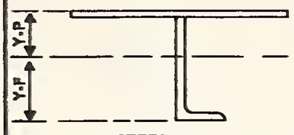


PROPERTIES OF
COMBINED BEAM AND PLATE
Ľ-L AND L

30t

7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 4 x 1 x 40.8 L	40.80	24.3	32.2	127.5	3.12	4.0	5.2	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	22.5	29.6	117.5	3.17	4.0	5.2	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	20.6	26.7	106.8	3.23	4.0	5.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	18.6	23.6	95.5	3.30	4.1	5.1	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	17.6	21.9	89.7	3.34	4.1	5.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	16.6	20.1	83.5	3.38	4.1	5.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	21.4	35.9	109.8	2.79	3.1	5.1	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	19.8	33.0	101.5	2.84	3.1	5.1	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	20.1	27.0	94.2	2.79	3.5	4.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	18.2	30.0	92.7	2.90	3.1	5.1	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	18.6	24.9	87.3	2.84	3.5	4.7	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	17.1	22.6	79.8	2.90	3.5	4.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	16.5	26.5	83.3	2.97	3.1	5.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	15.7	24.6	78.4	3.02	3.2	5.0	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	15.6	20.0	71.7	2.96	3.6	4.6	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23 L	22.95	14.8	22.7	73.3	3.06	3.2	5.0	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	14.8	18.7	67.5	3.00	3.6	4.6	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	13.9	20.5	67.8	3.12	3.3	4.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	14.0	17.1	63.0	3.04	3.7	4.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	13.1	15.6	58.4	3.09	3.7	4.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	15.0	20.6	62.4	2.51	3.0	4.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	13.9	18.7	57.4	2.56	3.1	4.1	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	12.7	16.7	51.9	2.63	3.1	4.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20 L	19.96	12.1	15.6	49.0	2.66	3.2	4.0	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	11.5	14.3	46.0	2.70	3.2	4.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	10.9	13.1	42.8	2.74	3.3	3.9	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	10.3	11.7	39.3	2.79	3.4	3.8	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	11.8	16.4	42.5	2.17	2.6	3.6	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	11.0	15.1	39.3	2.22	2.6	3.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20 L	19.92	10.2	13.5	35.9	2.28	2.7	3.5	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	9.7	12.7	34.0	2.31	2.7	3.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	9.3	11.7	32.0	2.35	2.7	3.4	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2x 1/2 x 15.3 L	15.30	9.1	10.7	30.4	2.34	2.8	3.3	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	8.8	10.7	29.9	2.39	2.8	3.4	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	8.4	9.6	27.6	2.43	2.9	3.3	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2x 3/8 x 11.7 L	11.63	8.2	8.7	26.2	2.42	3.0	3.2	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	7.9	8.4	25.1	2.48	3.0	3.2	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2x 5/16 x 9.8 L	9.76	7.7	7.7	23.8	2.46	3.1	3.1	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	6.4	7.3	21.1	2.50	3.3	2.9	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2x 3/4 x 19.8 L	19.75	8.2	10.6	23.9	1.87	2.3	2.9	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	7.6	9.6	22.0	1.92	2.3	2.9	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	7.1	8.4	19.9	1.98	2.4	2.8	4.00	5.00	3.50	0.500	2.50
12.8 L	12.75	6.9	7.5	18.7	1.97	2.5	2.7	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	6.7	8.9	19.9	2.07	2.2	3.0	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2x 7/16 x 12 L	12.00	6.8	7.7	18.7	2.02	2.4	2.8	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	6.6	6.9	17.5	2.00	2.5	2.6	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2x 3/8 x 10.4 L	10.37	6.5	6.9	17.3	2.05	2.5	2.7	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.2	6.3	16.3	2.04	2.6	2.6	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2x 5/16 x 8.7 L	8.70	6.0	6.1	15.8	2.09	2.6	2.6	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	5.5	6.0	14.9	2.07	2.7	2.5	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2x 1/4 x 7 L	7.00	5.1	5.8	14.1	2.13	2.8	2.4	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	4.6	5.7	13.2	2.10	2.9	2.3	1.94	5.00	3.00	0.250	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
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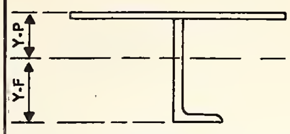
7.65# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7 L	14.62	5.6	7.1	13.1	1.56	1.8	2.3	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	5.4	6.3	12.2	1.56	1.9	2.2	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	5.2	6.2	11.9	1.61	1.9	2.3	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	5.1	5.6	11.2	1.61	2.0	2.2	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	5.1	5.7	11.3	1.65	2.0	2.2	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	4.9	5.1	10.5	1.64	2.1	2.1	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	4.9	5.2	10.5	1.68	2.0	2.2	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	4.7	4.8	9.9	1.67	2.1	2.1	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	4.7	5.0	10.2	1.72	2.0	2.2	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	4.6	4.7	9.7	1.71	2.1	2.1	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.1	4.6	9.0	1.70	2.2	2.0	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	3.9	4.4	8.7	1.74	2.2	1.9	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.5	4.4	8.1	1.72	2.3	1.8	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	4.3	4.7	8.3	1.43	1.8	1.9	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.1	4.2	7.6	1.41	1.9	1.8	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.2	4.3	7.8	1.45	1.8	1.9	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	3.8	4.1	7.2	1.44	1.9	1.8	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	3.9	4.0	7.3	1.47	1.9	1.8	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.4	4.0	6.8	1.46	2.0	1.7	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.4	3.9	6.7	1.50	2.0	1.7	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.0	3.8	6.2	1.48	2.1	1.6	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	2.9	3.7	6.0	1.52	2.1	1.6	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.6	3.7	5.6	1.49	2.2	1.5	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	3.5	3.8	5.8	1.23	1.5	1.7	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.3	3.4	5.4	1.23	1.6	1.6	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.4	3.5	5.5	1.26	1.6	1.6	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	2.8	3.3	4.8	1.21	1.7	1.5	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.1	3.4	5.1	1.25	1.7	1.5	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.2	3.3	5.2	1.28	1.6	1.6	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	2.8	3.3	4.8	1.27	1.7	1.5	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	2.8	3.2	4.8	1.30	1.7	1.5	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.5	3.1	4.4	1.28	1.8	1.4	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5 L	5.00	2.1	3.0	4.0	1.25	1.9	1.3	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.4	3.1	4.3	1.31	1.8	1.4	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.1	3.1	4.0	1.30	1.9	1.3	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.8	3.0	3.6	1.26	2.0	1.2	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	1.9	3.0	3.7	1.32	1.9	1.2	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.4	2.8	3.0	1.25	2.1	1.1	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	1.9	2.5	2.9	1.05	1.5	1.1	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.7	2.5	2.7	1.06	1.6	1.1	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.4	2.4	2.4	1.06	1.7	1.0	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.1	2.3	2.1	1.05	1.8	0.9	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.4	1.9	1.7	0.85	1.3	0.9	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.2	1.9	1.6	0.86	1.3	0.9	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	1.8	1.5	0.86	1.4	0.8	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	1.8	1.3	0.82	1.5	0.7	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	1.8	1.3	0.84	1.5	0.7	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	1.7	1.1	0.80	1.6	0.6	0.62	2.00	1.50	0.187	0.37



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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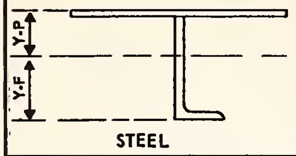
8.92# PLATE WEIGHT

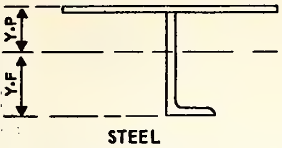
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
9 x 4 x 1 x 40.8 L	40.80	26.8	33.5	137.4	3.20	4.1	5.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	25.0	30.9	127.3	3.25	4.1	5.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	23.1	27.9	116.5	3.31	4.2	5.0	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	21.2	24.6	105.0	3.38	4.3	5.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	20.2	22.9	98.9	3.42	4.3	4.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	19.2	21.1	92.5	3.47	4.4	4.8	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	23.8	37.4	119.4	2.88	3.2	5.0	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	22.2	34.4	110.9	2.93	3.2	5.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	22.3	28.1	102.1	2.87	3.6	4.6	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	20.6	31.3	102.1	3.00	3.3	5.0	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	20.9	26.0	95.2	2.92	3.7	4.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	19.4	23.7	87.6	2.98	3.7	4.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	18.9	27.7	92.4	3.07	3.3	4.9	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	18.1	25.7	87.3	3.12	3.4	4.8	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	17.9	20.9	79.2	3.04	3.8	4.4	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	17.2	23.7	82.0	3.16	3.5	4.8	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	17.1	19.5	74.9	3.09	3.8	4.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	16.3	21.5	76.3	3.22	3.6	4.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	16.3	18.0	70.2	3.13	3.9	4.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	15.5	16.3	65.3	3.17	4.0	4.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	17.0	21.5	68.6	2.58	3.2	4.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	15.9	19.6	63.4	2.64	3.2	4.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	14.8	17.5	57.8	2.70	3.3	3.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	14.2	16.3	54.8	2.74	3.4	3.9	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	13.6	15.0	51.5	2.78	3.4	3.8	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	13.0	13.7	48.1	2.82	3.5	3.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	12.2	12.3	44.3	2.86	3.6	3.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	13.5	17.3	47.1	2.24	2.7	3.5	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	12.7	15.8	43.8	2.29	2.8	3.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	11.9	14.2	40.3	2.35	2.8	3.4	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	11.5	13.3	38.3	2.38	2.9	3.3	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	11.0	12.3	36.1	2.42	2.9	3.3	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	10.8	11.2	34.3	2.40	3.1	3.2	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	10.6	11.2	33.9	2.46	3.0	3.2	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.0	10.1	31.4	2.49	3.1	3.1	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.1	10.0	29.7	2.47	3.2	3.0	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	8.7	9.7	28.5	2.53	3.3	3.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.0	9.5	27.0	2.50	3.4	2.8	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	6.7	9.0	23.9	2.53	3.6	2.6	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	9.6	11.1	26.9	1.93	2.4	2.8	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	9.1	10.1	24.9	1.98	2.5	2.7	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	8.5	8.8	22.6	2.04	2.6	2.6	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	7.9	8.4	21.2	2.02	2.7	2.5	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	8.3	9.4	22.9	2.13	2.4	2.8	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.1	8.2	21.3	2.07	2.6	2.6	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.2	8.0	19.8	2.04	2.8	2.5	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.2	7.9	19.8	2.10	2.7	2.5	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.5	7.8	18.5	2.08	2.8	2.4	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.3	7.6	18.0	2.12	2.9	2.4	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	5.7	7.5	16.9	2.10	3.0	2.3	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.3	7.3	16.1	2.14	3.0	2.2	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	4.8	7.1	14.9	2.10	3.1	2.1	1.94	5.00	3.00	0.250	1.25



PROPERTIES OF
COMBINED BEAM AND PLATE
E-L AND L

8.92# PLATE WEIGHT

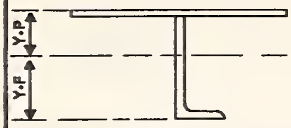
NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 5/8 x 14.7 L	14.62	6.7	7.5	15.0	1.62	2.0	2.2	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	6.6	6.6	13.9	1.60	2.1	2.1	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	6.4	6.5	13.6	1.66	2.1	2.1	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	5.9	6.3	12.8	1.65	2.2	2.0	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.0	6.2	12.9	1.69	2.1	2.1	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.4	6.1	12.1	1.67	2.2	2.0	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.4	6.0	12.1	1.71	2.2	2.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	4.9	5.9	11.3	1.70	2.3	1.9	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.2	5.9	11.7	1.75	2.2	2.0	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	4.8	5.9	11.1	1.74	2.3	1.9	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.3	5.7	10.3	1.71	2.4	1.8	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.0	5.6	9.9	1.74	2.5	1.8	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.6	5.5	9.2	1.72	2.6	1.7	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	4.9	5.3	9.5	1.46	1.9	1.8	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.3	5.1	8.7	1.44	2.0	1.7	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.5	5.2	9.0	1.48	2.0	1.7	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.0	5.0	8.2	1.46	2.1	1.6	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.1	5.0	8.4	1.50	2.1	1.7	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.6	4.9	7.7	1.48	2.2	1.6	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.6	4.9	7.7	1.51	2.1	1.6	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.1	4.8	7.1	1.48	2.2	1.5	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.0	4.7	6.8	1.51	2.3	1.4	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.7	4.6	6.3	1.48	2.4	1.4	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.0	4.3	6.7	1.26	1.7	1.5	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.5	4.3	6.2	1.25	1.8	1.4	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.7	4.3	6.4	1.28	1.7	1.5	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	2.9	4.1	5.5	1.22	1.9	1.3	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.2	4.2	5.9	1.27	1.8	1.4	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.4	4.2	6.0	1.30	1.8	1.4	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	2.9	4.1	5.5	1.28	1.9	1.3	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	2.9	4.1	5.5	1.31	1.9	1.3	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.6	4.0	5.0	1.28	2.0	1.3	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.2	3.8	4.5	1.24	2.1	1.2	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.5	3.9	4.9	1.31	2.0	1.2	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.2	3.9	4.5	1.28	2.1	1.2	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	3.8	4.0	1.24	2.1	1.1	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	3.8	4.2	1.29	2.1	1.1	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	3.6	3.4	1.20	2.3	0.9	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	1.9	3.2	3.3	1.05	1.7	1.0	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.7	3.1	3.0	1.05	1.8	1.0	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	3.0	2.7	1.04	1.8	0.9	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	2.9	2.3	1.01	1.9	0.8	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.4	2.4	2.0	0.84	1.4	0.8	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	2.4	1.9	0.85	1.4	0.8	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	2.3	1.7	0.84	1.5	0.7	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	2.2	1.4	0.79	1.6	0.6	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	2.3	1.4	0.81	1.6	0.6	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	2.2	1.2	0.76	1.7	0.6	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	70.1	74.2	657.9	6.29	8.9	9.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	65.6	69.1	614.1	6.42	8.9	9.4	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	61.0	64.0	570.3	6.59	8.9	9.3	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	58.8	61.5	548.4	6.68	8.9	9.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	67.3	75.5	542.5	5.08	7.2	8.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	63.9	71.6	514.9	5.16	7.2	8.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	62.1	69.5	499.9	5.21	7.2	8.1	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	60.3	67.4	485.4	5.25	7.2	8.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	58.5	65.3	470.4	5.31	7.2	8.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	56.7	63.1	455.4	5.37	7.2	8.0	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	54.8	61.0	440.4	5.43	7.2	8.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	52.6	54.4	407.8	5.30	7.5	7.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	53.0	58.9	425.4	5.51	7.2	8.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	46.8	47.4	359.2	5.54	7.6	7.7	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	43.1	43.3	329.4	5.74	7.6	7.6	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	44.4	48.1	305.9	4.64	6.4	6.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	39.4	42.1	269.9	4.86	6.4	6.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	37.0	39.2	251.9	5.02	6.4	6.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	35.4	37.2	240.4	5.14	6.5	6.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	40.8	44.6	261.2	4.30	5.9	6.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	38.4	41.7	244.8	4.37	5.9	6.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	36.5	39.2	231.6	4.52	5.9	6.3	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	35.1	35.2	215.1	4.45	6.1	6.1	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	34.3	36.5	216.7	4.67	5.9	6.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	32.9	33.3	202.6	4.56	6.2	6.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	31.7	32.4	196.3	4.63	6.2	6.1	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	29.8	31.8	157.7	3.66	5.0	5.3	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	27.1	28.4	142.2	3.84	5.0	5.2	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	24.7	25.4	128.5	3.91	5.2	5.1	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	25.3	26.0	131.6	4.00	5.1	5.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	22.6	24.3	120.1	3.94	5.3	4.9	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	23.1	24.3	121.3	4.03	5.3	5.0	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	20.9	23.1	112.6	4.07	5.4	4.9	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	29.7	34.8	148.3	3.27	4.3	5.0	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	27.9	32.1	138.1	3.33	4.3	4.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	26.1	29.0	127.0	3.39	4.4	4.9	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	24.1	25.7	115.1	3.46	4.5	4.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	23.2	23.9	108.8	3.50	4.6	4.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	21.9	22.2	102.0	3.54	4.7	4.6	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	26.5	38.9	129.9	2.96	3.3	4.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	24.9	35.9	121.3	3.01	3.4	4.9	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	24.9	29.3	110.9	2.93	3.8	4.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	23.4	32.6	112.3	3.08	3.4	4.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	23.5	27.1	103.8	2.99	3.8	4.4	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	22.0	24.7	96.0	3.05	3.9	4.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	21.7	28.8	102.2	3.16	3.5	4.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	20.9	26.8	96.8	3.20	3.6	4.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	20.5	21.8	87.3	3.12	4.0	4.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	20.0	24.7	91.2	3.25	3.7	4.6	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	19.8	20.4	82.7	3.16	4.1	4.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	19.2	22.3	85.1	3.30	3.8	4.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	18.7	19.0	77.7	3.19	4.2	4.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	17.0	18.2	72.5	3.23	4.3	4.0	5.06	8.00	4.00	0.437	3.50



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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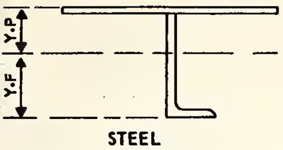
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	19.3	22.5	75.3	2.65	3.3	3.9	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	18.2	20.5	69.9	2.70	3.4	3.8	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	17.1	18.3	64.1	2.77	3.5	3.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	16.5	17.0	60.8	2.80	3.6	3.7	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	15.7	16.0	57.3	2.84	3.7	3.6	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	14.3	15.3	53.6	2.87	3.8	3.5	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	12.7	14.7	49.4	2.91	3.9	3.4	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	15.5	18.1	52.1	2.30	2.9	3.4	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	14.7	16.5	48.7	2.35	2.9	3.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	13.9	14.9	44.9	2.41	3.0	3.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	13.5	13.9	42.8	2.44	3.1	3.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	12.8	13.1	40.4	2.47	3.2	3.1	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	11.7	12.8	38.3	2.45	3.3	3.0	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	11.7	12.7	38.0	2.50	3.2	3.0	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.4	12.2	35.1	2.53	3.4	2.9	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.5	12.0	33.1	2.50	3.5	2.8	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.0	11.7	31.9	2.55	3.5	2.7	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.3	11.5	30.1	2.52	3.6	2.6	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	6.9	11.1	26.6	2.52	3.8	2.4	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	11.2	11.7	30.1	1.98	2.6	2.7	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	10.6	10.7	27.9	2.03	2.6	2.6	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.2	10.2	25.3	2.08	2.8	2.5	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.3	10.0	23.7	2.05	2.9	2.4	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	9.7	10.0	25.9	2.17	2.7	2.6	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.4	9.9	23.9	2.10	2.8	2.4	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.5	9.7	22.2	2.07	3.0	2.3	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.5	9.6	22.2	2.12	2.9	2.3	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	6.8	9.4	20.7	2.09	3.1	2.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.5	9.3	20.1	2.13	3.1	2.2	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	5.9	9.1	18.8	2.10	3.2	2.1	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.5	9.0	17.9	2.13	3.3	2.0	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	4.9	8.8	16.6	2.08	3.4	1.9	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	7.9	8.1	16.9	1.65	2.2	2.1	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.0	7.9	15.7	1.64	2.3	2.0	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	6.8	7.7	15.4	1.69	2.3	2.0	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.1	7.6	14.4	1.68	2.4	1.9	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.3	7.6	14.6	1.71	2.3	1.9	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.6	7.4	13.6	1.69	2.4	1.8	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.6	7.4	13.6	1.73	2.4	1.8	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.1	7.2	12.7	1.70	2.5	1.7	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.0	7.2	12.5	1.74	2.5	1.7	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.4	7.0	11.5	1.70	2.6	1.6	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.1	7.0	11.0	1.73	2.7	1.6	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.7	6.8	10.2	1.69	2.8	1.5	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.1	6.4	10.7	1.48	2.1	1.7	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.5	6.2	9.8	1.45	2.2	1.6	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.7	6.3	10.1	1.49	2.1	1.6	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.1	6.1	9.2	1.46	2.2	1.5	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.2	6.2	9.4	1.50	2.2	1.5	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.7	6.0	8.6	1.47	2.3	1.4	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.7	6.0	8.6	1.50	2.3	1.4	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.3	5.9	7.8	1.47	2.4	1.3	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.1	5.9	7.6	1.49	2.5	1.3	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.7	5.7	7.0	1.45	2.5	1.2	1.44	3.50	2.50	0.250	0.87



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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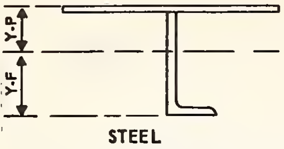
10.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
3 x 3 x 1/2 x 9.4 L	9.35	4.2	5.3	7.6	1.28	1.8	1.4	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.6	5.2	6.9	1.26	1.9	1.3	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	3.8	5.2	7.2	1.29	1.9	1.4	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.1	5.0	6.2	1.22	2.0	1.2	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.3	5.1	6.6	1.27	2.0	1.3	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.5	5.2	6.8	1.30	1.9	1.3	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.0	5.0	6.2	1.27	2.0	1.2	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.0	5.0	6.2	1.30	2.0	1.2	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.7	4.9	5.6	1.27	2.1	1.1	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.3	4.7	5.0	1.22	2.2	1.1	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.6	4.9	5.5	1.28	2.1	1.1	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	4.8	5.0	1.25	2.2	1.0	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	1.9	4.6	4.4	1.20	2.3	1.0	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.0	4.8	4.6	1.25	2.3	1.0	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	4.5	3.7	1.15	2.4	0.8	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.0	3.9	3.7	1.03	1.8	0.9	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	3.8	3.3	1.02	1.9	0.9	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	3.7	2.9	1.00	2.0	0.8	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	3.6	2.5	0.96	2.1	0.7	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	3.0	2.2	0.83	1.5	0.7	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.3	2.9	2.1	0.83	1.5	0.7	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.1	2.9	1.8	0.81	1.6	0.6	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	2.7	1.5	0.76	1.7	0.6	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	2.8	1.5	0.77	1.7	0.6	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	2.6	1.3	0.72	1.8	0.5	0.62	2.00	1.50	0.187	0.37



PROPERTIES OF
COMBINED BEAM AND PLATE
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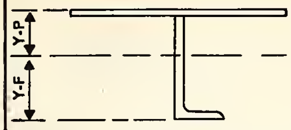
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	76.4	76.6	699.6	6.39	9.1	9.2	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	71.4	72.0	655.5	6.53	9.2	9.1	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	66.1	67.6	611.3	6.69	9.2	9.0	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	63.5	65.5	589.1	6.79	9.3	9.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	72.5	77.8	573.3	5.17	7.4	7.9	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	69.2	73.8	545.6	5.24	7.4	7.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	67.4	71.7	530.6	5.29	7.4	7.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	65.6	69.6	516.0	5.34	7.4	7.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	63.8	67.4	500.9	5.40	7.4	7.8	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	62.1	65.2	485.9	5.46	7.5	7.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	60.3	63.0	470.7	5.53	7.5	7.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	56.2	57.9	436.0	5.39	7.8	7.5	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	58.5	60.8	455.7	5.60	7.5	7.8	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	49.0	52.3	386.6	5.63	7.9	7.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	44.5	48.9	356.1	5.83	8.0	7.3	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	49.1	49.8	328.2	4.72	6.6	6.7	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	43.6	44.2	291.7	4.95	6.7	6.6	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	40.5	41.9	273.4	5.10	6.8	6.5	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	38.5	40.4	261.6	5.22	6.8	6.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	45.1	46.2	280.3	4.38	6.1	6.2	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	42.8	43.2	263.8	4.45	6.1	6.2	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	40.6	40.9	250.3	4.60	6.2	6.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	36.5	39.4	232.6	4.52	6.4	5.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	37.7	38.9	235.1	4.75	6.2	6.1	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	34.0	37.7	219.6	4.63	6.5	5.8	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	32.8	36.8	213.1	4.70	6.5	5.8	7.29	12.00	3.45	0.600	5.40
10 x 4 x 41.1 C	33.68	33.1	33.4	170.7	3.73	5.2	5.1	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	29.5	30.8	154.9	3.91	5.3	5.0	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	25.6	29.2	140.1	3.96	5.5	4.8	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	26.9	29.2	143.9	4.06	5.3	4.9	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	23.4	28.0	131.2	3.99	5.6	4.7	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	23.8	28.1	132.5	4.08	5.6	4.7	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	21.6	27.0	123.2	4.12	5.7	4.6	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	33.0	36.1	159.9	3.34	4.4	4.9	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	31.2	33.3	149.5	3.39	4.5	4.8	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	29.4	30.1	137.9	3.45	4.6	4.7	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	26.6	27.5	125.5	3.53	4.7	4.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	24.8	26.5	118.8	3.56	4.8	4.5	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	22.7	25.5	111.6	3.60	4.9	4.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	29.5	40.4	141.2	3.03	3.5	4.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	28.0	37.2	132.3	3.09	3.6	4.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	27.7	30.4	120.1	3.00	4.0	4.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	26.5	33.8	123.0	3.16	3.6	4.6	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	26.4	28.2	112.8	3.05	4.0	4.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	25.0	25.6	104.7	3.11	4.1	4.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	24.9	29.9	112.4	3.24	3.8	4.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	24.0	27.7	106.7	3.28	3.8	4.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	22.6	23.5	95.5	3.17	4.2	4.1	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	23.2	25.5	100.7	3.32	3.9	4.3	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	21.1	22.8	90.7	3.21	4.3	4.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	22.3	23.1	94.0	3.37	4.1	4.2	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	19.4	22.0	85.3	3.24	4.4	3.9	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	17.6	21.2	79.6	3.27	4.5	3.8	5.06	8.00	4.00	0.437	3.50



PROPERTIES OF
COMBINED BEAM AND PLATE
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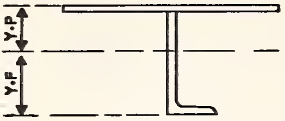
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	21.9	23.4	82.3	2.71	3.5	3.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	20.8	21.3	76.6	2.76	3.6	3.7	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	19.0	19.7	70.4	2.82	3.7	3.6	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	17.6	19.2	66.9	2.85	3.8	3.5	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	16.2	18.6	63.1	2.88	3.9	3.4	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	14.8	18.0	59.0	2.91	4.0	3.3	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.1	17.4	54.4	2.93	4.1	3.1	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	17.7	18.8	57.2	2.35	3.0	3.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	16.9	17.2	53.6	2.40	3.1	3.2	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	15.4	16.2	49.6	2.46	3.2	3.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	14.4	15.8	47.2	2.48	3.3	3.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	13.2	15.3	44.6	2.50	3.4	2.9	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.1	15.1	42.2	2.48	3.5	2.8	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.1	14.9	41.9	2.53	3.5	2.8	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	10.8	14.5	38.7	2.55	3.6	2.7	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	9.8	14.2	36.4	2.51	3.7	2.6	3.42	6.00	3.50	0.375	2.25
6 x 4 x 5/16 x 10.3 L	10.30	9.3	14.0	35.1	2.55	3.8	2.5	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.5	13.7	33.0	2.51	3.9	2.4	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.1	13.3	29.1	2.49	4.1	2.2	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	12.2	13.0	33.2	2.02	2.7	2.5	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.0	12.6	30.9	2.06	2.8	2.5	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.5	12.0	28.0	2.10	3.0	2.3	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.6	11.8	26.2	2.07	3.1	2.2	3.75	5.00	3.00	0.500	2.50
5 x 5 x 3/8 x 12.3 L	12.27	10.0	12.0	28.8	2.20	2.9	2.4	3.61	5.00	5.00	0.375	1.87
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.7	11.8	26.4	2.11	3.0	2.2	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	7.8	11.5	24.5	2.08	3.2	2.1	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	7.7	11.5	24.4	2.12	3.2	2.1	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.0	11.2	22.7	2.09	3.3	2.0	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.7	11.1	22.1	2.12	3.3	2.0	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.1	10.9	20.6	2.08	3.4	1.9	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.6	10.8	19.5	2.10	3.5	1.8	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.0	10.6	18.0	2.05	3.6	1.7	1.94	5.00	3.00	0.250	1.25
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.2	9.5	18.8	1.68	2.3	2.0	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.2	9.3	17.4	1.66	2.4	1.9	3.98	4.00	3.00	0.625	2.50
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.1	9.2	17.1	1.71	2.4	1.9	3.50	4.00	3.50	0.500	2.00
4 x 3 x 1/2 x 11.1 L	11.05	6.3	9.0	15.9	1.68	2.5	1.8	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.5	9.0	16.2	1.72	2.5	1.8	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	5.8	8.8	15.0	1.69	2.6	1.7	2.87	4.00	3.00	0.437	1.75
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.8	8.8	15.0	1.73	2.6	1.7	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.2	8.7	13.9	1.69	2.7	1.6	2.48	4.00	3.00	0.375	1.50
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.1	8.7	13.7	1.72	2.7	1.6	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.5	8.5	12.6	1.68	2.8	1.5	2.09	4.00	3.00	0.312	1.25
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.2	8.4	12.0	1.70	2.8	1.4	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.8	8.2	11.1	1.65	2.9	1.3	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.3	7.7	11.9	1.49	2.2	1.5	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.6	7.4	10.8	1.45	2.3	1.5	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	4.9	7.5	11.2	1.49	2.3	1.5	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.2	7.3	10.2	1.46	2.4	1.4	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.4	7.4	10.4	1.49	2.4	1.4	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.8	7.2	9.5	1.46	2.5	1.3	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.8	7.2	9.4	1.48	2.5	1.3	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.3	7.1	8.6	1.44	2.6	1.2	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.2	7.1	8.3	1.45	2.6	1.2	1.56	3.50	3.00	0.250	0.87



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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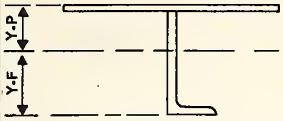
11.47# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.8	6.9	7.5	1.41	2.7	1.1	1.44	3.50	2.50	0.250	0.87
3 x 3 x 1/2 x 9.4 L	9.35	4.3	6.3	8.4	1.28	2.0	1.3	2.75	3.00	3.00	0.500	1.50
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.8	6.2	7.7	1.26	2.0	1.2	2.50	3.00	2.50	0.500	1.50
3 x 3 x 7/16 x 8.3 L	8.26	4.0	6.3	8.0	1.29	2.0	1.3	2.43	3.00	3.00	0.437	1.31
3 x 2 x 1/2 x 7.7 L	7.65	3.2	6.0	6.8	1.21	2.1	1.1	2.25	3.00	2.00	0.500	1.50
3 x 2 1/2 x 7/16 x 7.6 L	7.51	3.5	6.1	7.3	1.26	2.1	1.2	2.21	3.00	2.50	0.437	1.31
3 x 3 x 3/8 x 7.2 L	7.17	3.6	6.2	7.5	1.29	2.1	1.2	2.11	3.00	3.00	0.375	1.12
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.1	6.0	6.8	1.26	2.2	1.1	1.92	3.00	2.50	0.375	1.12
3 x 3 x 5/16 x 6.1 L	6.05	3.1	6.1	6.8	1.28	2.2	1.1	1.78	3.00	3.00	0.312	0.93
3 x 2 1/2 x 5/16 x 5.6 L	5.51	2.7	5.9	6.1	1.24	2.2	1.0	1.62	3.00	2.50	0.312	0.93
3 x 2 x 5/16 x 5.0 L	5.00	2.3	5.7	5.4	1.19	2.3	1.0	1.47	3.00	2.00	0.312	0.93
3 x 3 x 1/4 x 4.9 L	4.90	2.6	5.9	6.0	1.25	2.3	1.0	1.44	3.00	3.00	0.250	0.75
3 x 2 1/2 x 1/4 x 4.5 L	4.45	2.3	5.8	5.4	1.21	2.3	0.9	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	5.6	4.8	1.16	2.4	0.9	1.19	3.00	2.00	0.250	0.75
3 x 3 x 3/16 x 3.71 L	3.71	2.1	5.7	5.0	1.20	2.4	0.9	1.09	3.00	3.00	0.187	0.56
3 x 2 x 3/16 x 3.07 L	3.06	1.5	5.3	3.9	1.10	2.5	0.7	0.90	3.00	2.00	0.187	0.56
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.1	4.7	4.0	1.01	1.9	0.9	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.8	4.6	3.6	0.99	2.0	0.8	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.5	4.5	3.2	0.96	2.1	0.7	1.06	2.50	2.00	0.250	0.62
3/16 x 2.75 L	2.75	1.2	4.3	2.7	0.91	2.2	0.6	0.81	2.50	2.00	0.187	0.46
2 x 2 x 3/8 x 4.7 L	4.62	1.5	3.5	2.4	0.81	1.6	0.7	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	3.5	2.2	0.80	1.6	0.6	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	3.4	2.0	0.77	1.7	0.6	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	0.9	3.2	1.7	0.72	1.8	0.5	0.81	2.00	1.50	0.250	0.50
2 x 2 x 3/16 x 2.44 L	2.41	0.9	3.2	1.6	0.73	1.8	0.5	0.71	2.00	2.00	0.187	0.37
2 x 1 1/2 x 3/16 x 2.12 L	2.11	0.7	3.0	1.4	0.68	1.8	0.5	0.62	2.00	1.50	0.187	0.37



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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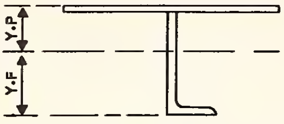
12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x IN. x LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	79.1	83.8	745.2	6.49	9.4	8.9	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	73.7	79.5	700.4	6.63	9.5	8.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	68.2	75.2	655.4	6.79	9.6	8.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	65.5	73.1	632.8	6.89	9.7	8.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	78.5	80.2	607.6	5.25	7.6	7.7	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	75.2	76.2	579.6	5.33	7.6	7.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	73.5	74.0	564.5	5.38	7.6	7.7	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	71.8	71.8	549.7	5.43	7.7	7.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	69.5	70.1	534.4	5.48	7.7	7.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	67.3	68.3	519.1	5.55	7.7	7.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	65.0	66.6	503.7	5.61	7.8	7.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	58.2	64.0	466.7	5.47	8.0	7.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	62.7	64.9	488.4	5.69	7.8	7.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	50.6	58.6	416.0	5.71	8.2	7.1	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	45.9	55.4	384.3	5.90	8.4	6.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	51.5	54.4	352.3	4.80	6.8	6.5	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	45.1	49.8	314.9	5.03	7.0	6.3	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	41.8	47.5	296.0	5.17	7.1	6.2	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	39.6	46.1	283.8	5.28	7.2	6.2	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	47.8	50.1	301.2	4.46	6.3	6.0	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	44.7	47.8	284.2	4.53	6.4	6.0	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	42.0	46.0	270.3	4.67	6.4	5.9	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	37.7	44.4	251.1	4.59	6.7	5.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	38.9	44.1	254.5	4.81	6.5	5.8	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	35.2	42.8	237.6	4.69	6.8	5.6	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	33.9	42.0	230.8	4.75	6.8	5.5	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	27.8	39.1	199.8	4.72	7.2	5.1	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	24.7	37.5	183.3	4.86	7.4	4.9	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	34.3	37.5	184.7	3.79	5.4	4.9	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	30.5	35.1	168.2	3.96	5.5	4.8	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	26.4	33.4	152.2	4.01	5.8	4.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	27.7	33.6	156.6	4.10	5.6	4.7	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	24.2	32.3	142.6	4.03	5.9	4.4	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	24.5	32.5	144.1	4.11	5.9	4.4	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.2	31.3	134.0	4.13	6.0	4.3	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	19.0	30.1	119.9	3.92	6.3	4.0	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	15.9	28.9	106.0	4.05	6.6	3.7	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	36.7	37.4	172.5	3.40	4.6	4.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	34.5	35.0	161.7	3.46	4.7	4.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	31.2	33.2	149.6	3.51	4.8	4.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	27.5	31.3	136.4	3.58	5.0	4.4	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	25.6	30.4	129.4	3.61	5.1	4.3	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	23.5	29.4	121.5	3.64	5.2	4.1	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	33.0	41.9	153.5	3.10	3.7	4.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	31.5	38.6	144.3	3.16	3.7	4.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	31.1	31.5	130.1	3.05	4.1	4.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	30.0	35.0	134.4	3.23	3.8	4.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	29.2	29.8	122.5	3.11	4.2	4.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	26.5	28.4	114.0	3.17	4.3	4.0	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	28.5	30.9	123.2	3.30	4.0	4.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	27.7	28.7	117.0	3.34	4.1	4.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	23.4	26.9	104.1	3.22	4.4	3.9	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	26.3	26.8	110.5	3.38	4.2	4.1	6.75	8.00	6.00	0.500	4.00



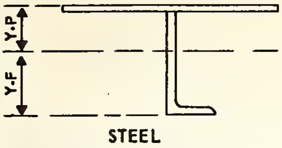
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

30t

12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	21.8	26.2	99.0	3.25	4.5	3.8	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	23.8	26.0	103.2	3.41	4.3	4.0	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	20.0	25.4	93.1	3.27	4.7	3.7	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.1	24.6	86.8	3.30	4.8	3.5	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	24.3	24.8	89.7	2.76	3.7	3.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	22.1	23.8	83.7	2.81	3.8	3.5	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	19.6	22.7	77.0	2.86	3.9	3.4	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.2	22.2	73.2	2.88	4.0	3.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	16.7	21.6	69.0	2.90	4.1	3.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.2	21.0	64.5	2.92	4.2	3.1	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.5	20.4	59.3	2.93	4.4	2.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	19.6	20.2	62.7	2.40	3.2	3.1	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	17.9	19.5	58.8	2.44	3.3	3.0	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.0	18.7	54.4	2.49	3.4	2.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	14.9	18.3	51.8	2.51	3.5	2.8	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	13.7	17.9	48.9	2.52	3.6	2.7	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.5	17.6	46.2	2.49	3.7	2.6	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.4	17.5	45.9	2.54	3.7	2.6	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	11.5	17.2	43.5	2.55	3.8	2.5	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.0	17.1	42.3	2.54	3.8	2.5	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.1	16.7	39.7	2.50	3.9	2.4	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.0	16.7	39.5	2.52	4.0	2.4	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	9.5	16.5	38.2	2.53	4.0	2.3	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.7	16.3	35.9	2.49	4.1	2.2	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.3	15.8	31.4	2.45	4.3	2.0	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	12.6	15.1	36.6	2.04	2.9	2.4	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.4	14.6	34.0	2.08	3.0	2.3	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	9.8	14.1	30.7	2.10	3.1	2.2	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	8.8	13.9	28.6	2.07	3.2	2.1	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	8.9	13.9	28.9	2.11	3.2	2.1	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.0	13.5	26.7	2.07	3.3	2.0	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.0	13.6	26.6	2.11	3.3	2.0	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.2	13.3	24.7	2.07	3.5	1.9	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	6.9	13.2	24.0	2.09	3.5	1.8	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.2	13.0	22.3	2.04	3.6	1.7	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.7	12.9	21.1	2.05	3.7	1.6	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.2	12.5	19.4	1.99	3.8	1.5	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	10.3	11.6	23.6	1.68	2.3	2.0	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	9.3	11.4	22.1	1.71	2.4	1.9	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.5	11.2	20.8	1.69	2.5	1.9	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.5	10.9	19.1	1.66	2.6	1.8	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.1	11.1	20.2	1.74	2.5	1.8	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.3	10.8	18.8	1.71	2.6	1.7	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.4	10.9	19.0	1.74	2.6	1.7	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	6.5	10.6	17.4	1.68	2.7	1.6	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.7	10.7	17.7	1.71	2.7	1.7	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.0	10.4	16.4	1.68	2.7	1.6	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.6	10.7	17.6	1.74	2.7	1.6	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	5.9	10.5	16.4	1.71	2.8	1.6	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.3	10.3	15.1	1.67	2.8	1.5	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.7	10.4	15.9	1.73	2.8	1.5	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.2	10.3	14.9	1.70	2.9	1.4	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.6	10.0	13.7	1.65	3.0	1.4	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.8	10.2	14.0	1.69	2.9	1.4	1.94	4.00	4.00	0.250	1.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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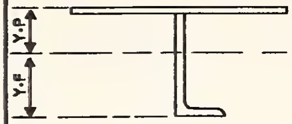
12.75# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.3	10.0	13.0	1.65	3.0	1.3	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	9.8	11.9	1.61	3.1	1.2	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.5	9.1	13.0	1.48	2.4	1.4	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.8	8.8	11.8	1.44	2.5	1.3	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.0	8.9	12.2	1.48	2.4	1.4	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.4	8.7	11.1	1.44	2.5	1.3	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.5	8.8	11.3	1.47	2.5	1.3	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	3.9	8.6	10.3	1.43	2.6	1.2	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.9	8.6	10.2	1.45	2.6	1.2	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.4	8.4	9.2	1.40	2.7	1.1	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.2	8.4	8.9	1.41	2.7	1.1	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	8.1	8.1	1.36	2.8	1.0	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	3.9	7.3	8.4	1.24	2.2	1.1	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.6	7.2	7.9	1.24	2.2	1.1	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.2	7.1	7.3	1.23	2.3	1.0	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.8	7.0	6.6	1.20	2.4	0.9	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	6.8	5.8	1.17	2.5	0.8	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	6.5	5.1	1.11	2.5	0.8	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.1	5.5	4.3	0.98	2.0	0.8	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	5.4	3.9	0.96	2.1	0.7	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	5.2	3.4	0.92	2.2	0.7	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.6	4.2	2.6	0.78	1.7	0.6	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	4.1	2.4	0.77	1.7	0.6	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	4.0	2.1	0.74	1.8	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	3.7	1.8	0.69	1.8	0.5	0.81	2.00	1.50	0.250	0.50



STEEL

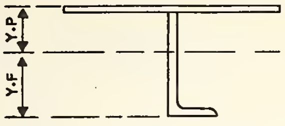
PROPERTIES OF COMBINED BEAM AND PLATE

[-L AND L

30t

14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	81.4	91.7	791.2	6.58	9.7	8.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	75.9	87.5	745.5	6.71	9.8	8.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	70.2	83.4	699.2	6.87	10.0	8.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	67.3	81.4	675.9	6.96	10.0	8.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	82.6	85.0	642.7	5.33	7.8	7.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	78.4	81.8	614.3	5.41	7.8	7.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	76.2	80.1	598.9	5.45	7.9	7.5	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	73.9	78.4	583.8	5.50	7.9	7.4	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	71.6	76.7	568.2	5.56	7.9	7.4	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	69.3	75.0	552.6	5.62	8.0	7.4	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	66.9	73.4	536.8	5.69	8.0	7.3	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	59.9	70.6	497.4	5.54	8.3	7.0	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	64.5	71.7	521.1	5.76	8.1	7.3	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	52.1	65.3	444.9	5.77	8.5	6.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	47.1	62.3	411.7	5.94	8.7	6.6	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	53.1	60.2	376.5	4.87	7.1	6.3	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	46.4	55.7	337.8	5.08	7.3	6.1	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	42.9	53.6	318.1	5.22	7.4	5.9	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	40.6	52.3	305.2	5.32	7.5	5.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	49.3	55.4	322.0	4.52	6.5	5.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	46.1	53.1	304.5	4.59	6.6	5.7	10.93	12 00	4.00	0.700	8.40
40.0 C	32.19	43.2	51.5	289.9	4.72	6.7	5.6	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	38.9	49.7	269.3	4.63	6.9	5.4	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	40.0	49.7	273.4	4.85	6.8	5.5	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	36.2	48.2	255.1	4.73	7.1	5.3	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	34.8	47.5	247.8	4.78	7.1	5.2	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	28.5	44.4	214.4	4.73	7.5	4.8	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	25.2	43.0	196.4	4.85	7.8	4.6	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	35.4	41.9	198.5	3.84	5.6	4.7	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	31.3	39.7	181.1	4.00	5.8	4.6	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	27.1	38.0	163.7	4.03	6.0	4.3	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	28.5	38.2	168.8	4.13	5.9	4.4	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	24.8	36.9	153.4	4.04	6.2	4.2	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.1	37.1	155.0	4.11	6.2	4.2	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	22.7	36.0	144.1	4.13	6.3	4.0	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	19.5	34.5	128.7	3.91	6.6	3.7	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.3	33.4	113.2	4.00	7.0	3.4	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	38.6	40.7	185.2	3.45	4.8	4.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	35.6	39.0	173.9	3.50	4.9	4.5	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	32.1	37.2	161.1	3.56	5.0	4.3	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	28.3	35.4	147.1	3.61	5.2	4.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	26.3	34.5	139.5	3.64	5.3	4.0	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	24.1	33.5	131.0	3.66	5.4	3.9	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	36.8	43.3	165.8	3.17	3.8	4.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	35.3	39.8	156.2	3.22	3.9	4.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	32.6	34.6	140.0	3.10	4.3	4.0	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	33.8	36.1	145.8	3.29	4.0	4.3	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	30.1	33.3	132.1	3.15	4.4	4.0	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	27.4	32.0	123.1	3.20	4.5	3.8	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	31.8	32.3	133.7	3.35	4.2	4.1	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	29.5	31.5	127.0	3.38	4.3	4.0	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	24.1	30.5	112.5	3.25	4.7	3.7	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	27.0	30.7	120.0	3.41	4.4	3.9	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
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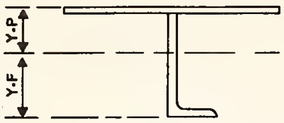
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	22.4	29.8	106.9	3.27	4.8	3.6	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	24.4	29.8	111.9	3.44	4.6	3.8	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	20.6	29.1	100.5	3.29	4.9	3.5	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	18.6	28.3	93.7	3.30	5.0	3.3	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	25.1	28.0	97.1	2.80	3.9	3.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	22.8	27.0	90.6	2.84	4.0	3.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.2	25.9	83.3	2.88	4.1	3.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	18.7	25.4	79.2	2.90	4.2	3.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.2	24.8	74.6	2.91	4.3	3.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.6	24.2	69.6	2.92	4.5	2.9	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	13.8	23.6	63.9	2.91	4.6	2.7	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	20.2	22.9	68.1	2.43	3.4	3.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	18.4	22.2	63.9	2.47	3.5	2.9	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.4	21.5	59.1	2.51	3.6	2.8	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.3	21.1	56.2	2.52	3.7	2.7	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.0	20.6	53.0	2.53	3.8	2.6	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	12.8	20.3	49.9	2.49	3.9	2.5	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	12.7	20.2	49.6	2.53	3.9	2.4	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	11.8	20.0	46.9	2.53	4.0	2.4	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.3	19.8	45.6	2.52	4.0	2.3	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.3	19.4	42.7	2.47	4.1	2.2	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.2	19.4	42.5	2.50	4.2	2.2	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	9.7	19.2	41.0	2.50	4.2	2.1	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	8.9	18.9	38.4	2.45	4.3	2.0	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.4	18.3	33.4	2.39	4.5	1.8	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.0	17.3	39.7	2.06	3.0	2.3	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	11.7	16.9	36.9	2.09	3.2	2.2	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.0	16.3	33.2	2.10	3.3	2.0	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.0	16.0	30.9	2.06	3.4	1.9	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.1	16.1	31.1	2.10	3.4	1.9	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.2	15.7	28.7	2.05	3.5	1.8	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.1	15.8	28.6	2.08	3.5	1.8	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.3	15.4	26.5	2.03	3.6	1.7	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.0	15.4	25.7	2.05	3.7	1.7	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.3	15.1	23.8	2.00	3.8	1.6	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.8	15.0	22.4	2.00	3.8	1.5	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.2	14.6	20.6	1.94	3.9	1.4	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	10.7	13.4	25.8	1.69	2.4	1.9	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	9.6	13.1	24.1	1.72	2.5	1.8	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.7	12.9	22.6	1.70	2.6	1.8	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.7	12.6	20.8	1.66	2.7	1.7	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.3	12.8	22.0	1.73	2.6	1.7	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.5	12.6	20.4	1.70	2.7	1.6	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.6	12.7	20.6	1.73	2.7	1.6	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	6.7	12.3	18.8	1.66	2.8	1.5	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	6.8	12.4	19.1	1.70	2.8	1.5	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.1	12.1	17.6	1.66	2.9	1.5	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.7	12.5	19.0	1.72	2.8	1.5	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.1	12.2	17.6	1.68	2.9	1.4	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.4	11.9	16.2	1.64	3.0	1.4	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.8	12.2	17.1	1.69	2.9	1.4	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.3	12.0	16.0	1.66	3.0	1.3	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.7	11.7	14.6	1.61	3.1	1.3	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.8	11.9	14.9	1.65	3.1	1.3	1.94	4.00	4.00	0.250	1.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
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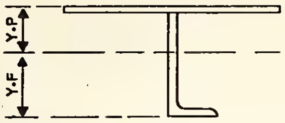
14.02# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	11.6	13.8	1.61	3.2	1.2	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	3.9	11.3	12.7	1.56	3.2	1.1	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.6	10.5	14.0	1.46	2.5	1.3	3.00	3.50	3.00	0.500	1.75
3 1/2 x 2 1/2 x 1/2 x 9.4 L	9.35	4.9	10.2	12.7	1.42	2.6	1.3	2.75	3.50	2.50	0.500	1.75
3 1/2 x 3 x 7/16 x 9.1 L	9.01	5.1	10.4	13.2	1.46	2.6	1.3	2.65	3.50	3.00	0.437	1.53
3 1/2 x 2 1/2 x 7/16 x 8.3 L	8.26	4.5	10.0	11.9	1.41	2.7	1.2	2.43	3.50	2.50	0.437	1.53
3 1/2 x 3 x 3/8 x 7.9 L	7.82	4.6	10.2	12.1	1.44	2.7	1.2	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.0	9.9	11.0	1.39	2.7	1.1	2.11	3.50	2.50	0.375	1.31
3 1/2 x 3 x 5/16 x 6.6 L	6.56	3.9	9.9	10.9	1.41	2.8	1.1	1.93	3.50	3.00	0.312	1.09
3 1/2 x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	9.7	9.8	1.36	2.8	1.0	1.78	3.50	2.50	0.312	1.09
3 1/2 x 3 x 1/4 x 5.4 L	5.30	3.3	9.7	9.4	1.36	2.9	1.0	1.56	3.50	3.00	0.250	0.87
3 1/2 x 2 1/2 x 1/4 x 4.9 L	4.90	2.9	9.4	8.6	1.31	2.9	0.9	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.0	8.5	9.1	1.22	2.3	1.1	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.6	8.4	8.5	1.21	2.3	1.0	2.21	3.00	2.50	0.437	1.31
3/8 x 6.6 L	6.53	3.3	8.3	7.8	1.20	2.4	0.9	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.8	8.0	7.0	1.17	2.5	0.9	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	7.8	6.1	1.12	2.6	0.8	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.0	7.5	5.4	1.07	2.6	0.7	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	6.3	4.6	0.95	2.1	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	6.1	4.1	0.92	2.2	0.7	1.31	2.50	2.00	0.312	0.78
1/4 x 3.62 L	3.60	1.6	5.9	3.6	0.88	2.2	0.6	1.06	2.50	2.00	0.250	0.62
2 x 2 x 3/8 x 4.7 L	4.62	1.6	4.7	2.8	0.76	1.7	0.6	1.36	2.00	2.00	0.375	0.75
5/16 x 3.92 L	3.91	1.4	4.6	2.6	0.74	1.8	0.6	1.15	2.00	2.00	0.312	0.62
1/4 x 3.19 L	3.20	1.2	4.5	2.2	0.71	1.8	0.5	0.94	2.00	2.00	0.250	0.50
2 x 1 1/2 x 1/4 x 2.77 L	2.75	1.0	4.1	1.9	0.65	1.9	0.5	0.81	2.00	1.50	0.250	0.50



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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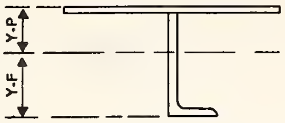
15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	83.7	100.3	838.4	6.65	10.0	8.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	77.9	96.3	791.3	6.78	10.2	8.2	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	72.0	92.3	743.4	6.93	10.3	8.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	69.0	90.4	719.1	7.01	10.4	8.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	85.0	92.0	679.2	5.40	8.0	7.4	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	80.7	88.9	650.2	5.48	8.1	7.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	78.3	87.2	634.4	5.52	8.1	7.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	76.0	85.6	619.0	5.57	8.1	7.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	73.6	84.0	602.9	5.63	8.2	7.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	71.1	82.3	586.9	5.69	8.2	7.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	68.7	80.7	570.6	5.75	8.3	7.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	61.7	77.7	528.6	5.60	8.6	6.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	66.2	79.2	554.3	5.82	8.4	7.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	53.5	72.7	473.8	5.81	8.9	6.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	48.3	69.8	438.7	5.97	9.1	6.3	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	54.7	66.4	401.0	4.92	7.3	6.0	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	47.7	62.1	360.7	5.12	7.6	5.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	44.0	60.1	339.8	5.25	7.7	5.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	41.6	59.0	326.1	5.34	7.8	5.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	50.8	61.1	343.2	4.57	6.8	5.6	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	47.4	58.9	325.0	4.63	6.9	5.5	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	44.3	57.4	309.6	4.76	7.0	5.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	39.9	55.5	287.5	4.66	7.2	5.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	40.9	55.7	292.0	4.87	7.1	5.2	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	37.1	54.1	272.3	4.75	7.3	5.0	7.86	12.00	3.50	0.600	6.00
12 30.9 C	24.79	35.6	53.4	264.5	4.79	7.4	5.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	29.2	50.3	228.6	4.72	7.8	4.5	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	25.8	49.0	208.9	4.81	8.1	4.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	36.4	46.7	212.3	3.88	5.8	4.5	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	32.2	44.6	193.9	4.02	6.0	4.3	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	27.8	42.9	175.0	4.03	6.3	4.1	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	29.1	43.3	180.6	4.13	6.2	4.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	25.4	41.8	163.9	4.03	6.5	3.9	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	25.7	42.1	165.5	4.10	6.4	3.9	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.2	41.0	153.6	4.10	6.6	3.7	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	19.9	39.2	136.9	3.88	6.9	3.5	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	16.6	38.3	119.9	3.94	7.2	3.1	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	39.8	45.0	198.0	3.49	5.0	4.4	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	36.6	43.4	186.2	3.54	5.1	4.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	33.0	41.6	172.7	3.59	5.2	4.1	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	29.1	39.8	157.6	3.63	5.4	4.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	27.0	38.9	149.5	3.65	5.5	3.8	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	24.7	37.9	140.2	3.66	5.7	3.7	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	40.9	44.6	178.5	3.22	4.0	4.4	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	39.5	41.0	168.3	3.27	4.1	4.3	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	33.6	38.5	150.1	3.14	4.5	3.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	37.1	38.0	157.2	3.33	4.2	4.1	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	31.0	37.2	141.7	3.19	4.6	3.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	28.1	35.9	132.1	3.23	4.7	3.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	32.6	36.5	144.2	3.39	4.4	4.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	30.2	35.7	136.9	3.41	4.5	3.8	7.56	8.00	6.00	0.562	4.50



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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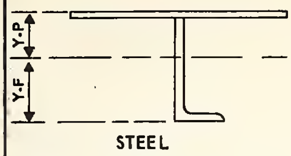
15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 5/8 x 24.2 L	24.17	24.8	34.5	120.7	3.26	4.9	3.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	27.7	34.9	129.2	3.43	4.7	3.7	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	23.0	33.8	114.6	3.28	5.0	3.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	24.9	34.0	120.4	3.44	4.8	3.5	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.0	33.0	107.6	3.29	5.1	3.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.0	32.2	100.2	3.29	5.3	3.1	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	25.8	31.4	104.4	2.83	4.0	3.3	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	23.4	30.4	97.4	2.86	4.2	3.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	20.7	29.4	89.6	2.89	4.3	3.1	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	19.2	28.8	85.0	2.90	4.4	2.9	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	17.6	28.2	79.9	2.91	4.5	2.8	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	15.9	27.6	74.5	2.90	4.7	2.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.1	27.0	68.2	2.88	4.8	2.5	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	20.8	25.8	73.4	2.45	3.5	2.8	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	18.9	25.1	68.8	2.48	3.6	2.7	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	16.9	24.4	63.5	2.51	3.8	2.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	15.6	24.0	60.4	2.52	3.9	2.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.3	23.6	56.8	2.52	4.0	2.4	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.1	23.1	53.4	2.47	4.1	2.3	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.0	23.2	53.1	2.51	4.1	2.3	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.0	22.9	50.1	2.50	4.2	2.2	3.78	6.00	3.50	0.475	2.25
6 x 4 3/8 x 12.3 L	12.27	11.5	22.7	48.6	2.49	4.2	2.1	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.5	22.2	45.4	2.44	4.3	2.0	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.4	22.3	45.2	2.46	4.3	2.0	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	9.9	22.1	43.6	2.45	4.4	2.0	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.1	21.7	40.8	2.40	4.5	1.9	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.5	21.1	35.2	2.32	4.7	1.7	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	13.4	19.7	42.8	2.07	3.2	2.2	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.0	19.2	39.7	2.08	3.3	2.1	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.3	18.7	35.6	2.08	3.5	1.9	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.2	18.3	33.0	2.04	3.6	1.8	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.3	18.4	33.3	2.07	3.6	1.8	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.3	17.9	30.6	2.02	3.7	1.7	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.3	18.1	30.5	2.05	3.7	1.7	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.5	17.6	28.2	2.00	3.8	1.6	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.1	17.6	27.3	2.01	3.8	1.5	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.4	17.2	25.2	1.95	3.9	1.5	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	5.9	17.2	23.7	1.94	4.0	1.4	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.3	16.7	21.7	1.88	4.1	1.3	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.0	15.3	28.0	1.70	2.5	1.8	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	9.8	15.0	26.0	1.72	2.6	1.7	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	8.9	14.7	24.3	1.69	2.7	1.7	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	7.9	14.3	22.3	1.65	2.8	1.6	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.5	14.7	23.6	1.72	2.8	1.6	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.7	14.4	21.9	1.68	2.9	1.5	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	7.7	14.5	22.0	1.71	2.9	1.5	3.31	4.00	4.00	0.437	1.75
4 x 3 1/2 x 1/2 x 11.1 L	11.05	6.8	14.1	20.1	1.64	2.9	1.4	3.25	4.00	3.00	0.500	2.00
7/16 x 10.6 L	10.51	7.0	14.2	20.4	1.67	2.9	1.4	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.2	13.8	18.8	1.63	3.0	1.4	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	6.9	14.3	20.3	1.69	3.0	1.4	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.2	14.0	18.7	1.65	3.0	1.3	2.67	4.00	3.50	0.375	1.50



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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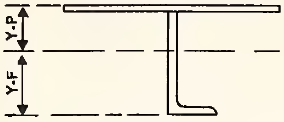
15.3# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 3/8 x 8.5 L	8.43	5.5	13.6	17.3	1.60	3.1	1.3	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	5.9	14.0	18.1	1.66	3.1	1.3	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.4	13.7	16.9	1.62	3.1	1.2	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	4.8	13.3	15.4	1.56	3.2	1.2	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	4.9	13.6	15.8	1.60	3.2	1.2	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.4	13.3	14.6	1.55	3.3	1.1	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.0	12.9	13.3	1.50	3.3	1.0	1.69	4.00	3.00	0.250	1.00
3 1/2 x 3 x 1/2 x 10.2 L	10.20	5.7	12.0	15.0	1.44	2.6	1.3	3.00	3.50	3.00	0.500	1.75
x 2 1/2 x 1/2 x 9.4 L	9.35	5.0	11.6	13.5	1.39	2.7	1.2	2.75	3.50	2.50	0.500	1.75
x 3 x 7/16 x 9.1 L	9.01	5.2	11.8	14.0	1.43	2.7	1.2	2.65	3.50	3.00	0.437	1.53
x 2 1/2 x 7/16 x 8.3 L	8.26	4.6	11.5	12.6	1.38	2.8	1.1	2.43	3.50	2.50	0.437	1.53
x 3 x 3/8 x 7.9 L	7.82	4.7	11.6	12.9	1.41	2.8	1.1	2.30	3.50	3.00	0.375	1.31
3 1/2 x 2 1/2 x 3/8 x 7.2 L	7.17	4.1	11.3	11.6	1.36	2.8	1.0	2.11	3.50	2.50	0.375	1.31
x 3 x 5/16 x 6.6 L	6.56	4.0	11.4	11.5	1.37	2.9	1.0	1.93	3.50	3.00	0.312	1.09
x 2 1/2 x 5/16 x 6.1 L	6.05	3.5	11.0	10.4	1.32	2.9	0.9	1.78	3.50	2.50	0.312	1.09
x 3 x 1/4 x 5.4 L	5.30	3.3	11.0	9.9	1.31	3.0	0.9	1.56	3.50	3.00	0.250	0.87
x 2 1/2 x 1/4 x 4.9 L	4.90	3.0	10.6	9.0	1.26	3.0	0.8	1.44	3.50	2.50	0.250	0.87
3 x 2 1/2 x 1/2 x 8.5 L	8.50	4.1	9.6	9.7	1.20	2.4	1.0	2.50	3.00	2.50	0.500	1.50
7/16 x 7.6 L	7.51	3.7	9.5	9.0	1.18	2.4	0.9	2.21	3.00	2.50	0.437	1.31
3 x 2 1/2 x 3/8 x 6.6 L	6.53	3.3	9.4	8.3	1.16	2.5	0.9	1.92	3.00	2.50	0.375	1.12
5/16 x 5.6 L	5.51	2.9	9.1	7.4	1.13	2.6	0.8	1.62	3.00	2.50	0.312	0.93
1/4 x 4.5 L	4.45	2.4	8.8	6.4	1.08	2.6	0.7	1.31	3.00	2.50	0.250	0.75
3 x 2 x 1/4 x 4.1 L	4.05	2.1	8.4	5.6	1.02	2.7	0.7	1.19	3.00	2.00	0.250	0.75
2 1/2 x 2 x 3/8 x 5.3 L	5.27	2.2	7.1	4.9	0.92	2.2	0.7	1.55	2.50	2.00	0.375	0.93
5/16 x 4.5 L	4.45	1.9	6.9	4.4	0.89	2.2	0.6	1.31	2.50	2.00	0.312	0.78



PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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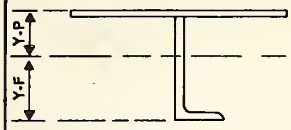
STEEL

17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	88.0	120.0	936.0	6.76	10.6	7.8	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	81.8	116.2	885.0	6.87	10.8	7.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	75.4	112.5	832.6	6.99	11.0	7.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	72.2	110.8	805.7	7.06	11.2	7.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	89.5	108.1	756.2	5.51	8.4	7.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	84.9	105.2	725.5	5.59	8.5	6.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	82.4	103.6	708.6	5.63	8.6	6.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	79.9	102.1	692.1	5.68	8.7	6.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	77.3	100.5	674.8	5.73	8.7	6.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	74.7	99.0	657.4	5.78	8.8	6.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	72.0	97.5	639.7	5.83	8.9	6.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	64.8	94.0	592.4	5.67	9.1	6.3	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	69.3	96.1	621.8	5.89	9.0	6.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	56.0	89.4	531.4	5.84	9.5	5.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	50.3	86.8	491.5	5.95	9.8	5.7	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	57.5	80.6	451.1	4.99	7.8	5.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	49.9	76.7	406.2	5.16	8.1	5.3	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	45.8	75.0	382.4	5.25	8.3	5.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	43.2	74.1	366.5	5.31	8.5	4.9	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	53.4	74.2	386.4	4.63	7.2	5.2	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	49.8	72.2	366.3	4.69	7.4	5.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	46.4	70.9	348.7	4.79	7.5	4.9	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	41.8	68.7	323.4	4.68	7.7	4.7	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	42.6	69.5	328.5	4.87	7.7	4.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	38.7	67.4	306.0	4.74	7.9	4.5	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	37.1	66.8	296.9	4.77	8.0	4.4	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	30.4	63.4	255.4	4.65	8.4	4.0	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	26.6	62.5	232.0	4.69	8.7	3.7	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	38.3	57.6	240.1	3.92	6.3	4.2	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	33.6	55.8	218.8	4.02	6.5	3.9	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	28.9	54.0	196.7	4.00	6.8	3.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	30.2	54.7	203.2	4.10	6.7	3.7	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	26.4	52.9	183.7	3.98	7.0	3.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	26.6	53.4	185.3	4.04	7.0	3.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	23.9	52.3	171.4	4.01	7.2	3.3	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	20.7	49.8	152.4	3.79	7.4	3.1	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.0	49.1	132.0	3.77	7.7	2.7	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	41.9	54.9	224.3	3.55	5.4	4.1	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	38.5	53.3	211.1	3.59	5.5	4.0	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	34.6	51.6	195.6	3.62	5.6	3.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	30.4	49.8	178.2	3.64	5.9	3.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	28.2	48.9	168.7	3.64	6.0	3.5	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	25.7	47.9	157.9	3.63	6.1	3.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	46.9	50.2	204.6	3.30	4.4	4.1	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	43.0	48.8	193.0	3.35	4.5	4.0	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	35.4	47.2	170.6	3.19	4.8	3.6	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	38.9	47.4	180.2	3.39	4.6	3.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	32.6	46.0	161.1	3.23	4.9	3.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	29.5	44.7	150.0	3.25	5.1	3.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	34.0	45.9	164.9	3.42	4.8	3.6	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	31.4	45.1	156.3	3.43	5.0	3.5	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	25.9	43.3	136.6	3.26	5.3	3.2	7.11	8.00	4.00	0.625	5.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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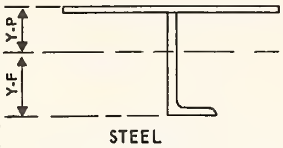
17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 6 x 1/2 x 23.0 L	22.95	28.7	44.3	147.1	3.43	5.1	3.3	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	24.0	42.6	129.5	3.26	5.4	3.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	25.8	43.4	136.5	3.42	5.3	3.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	21.9	41.8	121.2	3.25	5.5	2.9	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	19.7	41.0	112.4	3.22	5.7	2.7	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	27.1	39.0	119.0	2.85	4.4	3.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	24.5	38.1	110.9	2.87	4.5	2.9	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	21.6	37.1	101.5	2.88	4.7	2.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.0	36.5	96.1	2.87	4.8	2.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.3	35.9	90.0	2.86	4.9	2.5	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.5	35.3	83.5	2.84	5.1	2.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.5	34.5	76.0	2.79	5.2	2.2	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	21.9	32.3	84.0	2.47	3.8	2.6	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	19.8	31.6	78.5	2.49	4.0	2.5	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	17.6	30.9	72.1	2.49	4.1	2.3	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.3	30.5	68.3	2.48	4.2	2.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	14.9	30.0	64.0	2.47	4.3	2.1	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	13.6	29.5	60.0	2.42	4.4	2.0	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.4	29.6	59.5	2.45	4.4	2.0	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.4	29.3	55.9	2.42	4.5	1.9	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	11.9	29.0	54.2	2.41	4.6	1.9	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	10.8	28.4	50.5	2.35	4.7	1.8	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	10.7	28.5	50.1	2.36	4.7	1.8	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.2	28.3	48.2	2.34	4.7	1.7	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.3	27.7	44.9	2.28	4.8	1.6	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.7	26.9	38.5	2.18	5.0	1.4	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.0	24.9	48.8	2.05	3.5	2.0	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.5	24.4	44.9	2.05	3.6	1.8	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.6	23.8	40.0	2.02	3.8	1.7	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.6	23.2	36.9	1.97	3.9	1.6	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.6	23.5	37.2	2.00	3.9	1.6	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.6	22.8	34.1	1.94	3.9	1.5	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.5	23.0	33.9	1.96	4.0	1.5	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.7	22.5	31.1	1.90	4.1	1.4	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.3	22.5	30.0	1.90	4.1	1.3	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.6	21.9	27.6	1.84	4.2	1.3	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.1	21.8	25.8	1.82	4.3	1.2	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.5	21.1	23.6	1.75	4.3	1.1	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	11.5	19.4	32.1	1.69	2.8	1.7	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.3	19.2	29.7	1.69	2.9	1.5	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.3	18.8	27.6	1.66	3.0	1.5	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.2	18.2	25.2	1.61	3.1	1.4	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	8.8	18.8	26.7	1.67	3.0	1.4	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	7.9	18.3	24.6	1.63	3.1	1.3	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.0	18.5	24.8	1.65	3.1	1.3	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.1	17.9	22.5	1.58	3.2	1.3	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.2	18.1	22.9	1.61	3.2	1.3	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.4	17.6	20.9	1.56	3.2	1.2	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.1	18.2	22.6	1.62	3.2	1.2	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.4	17.7	20.8	1.57	3.3	1.2	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.7	17.3	19.1	1.52	3.3	1.1	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.1	17.7	20.1	1.57	3.3	1.1	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.5	17.4	18.6	1.53	3.4	1.1	2.25	4.00	3.50	0.312	1.25



PROPERTIES OF
COMBINED BEAM AND PLATE
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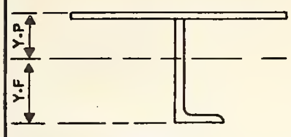
17.85# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	4.9	16.8	16.9	1.47	3.4	1.0	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.0	17.2	17.3	1.50	3.4	1.0	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.6	16.7	15.9	1.45	3.5	1.0	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.1	16.2	14.5	1.39	3.5	0.9	1.69	4.00	3.00	0.250	1.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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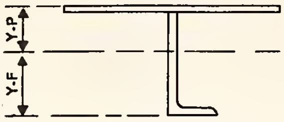
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	91.7	142.2	1,031.7	6.81	11.2	7.3	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	85.1	138.6	975.7	6.90	11.5	7.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	78.3	135.3	917.3	6.99	11.7	6.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	74.8	133.7	887.1	7.04	11.9	6.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	93.7	126.3	834.1	5.60	8.9	6.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	88.8	123.5	800.9	5.66	9.0	6.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	86.1	122.0	782.5	5.70	9.1	6.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	83.4	120.6	764.5	5.74	9.2	6.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	80.7	119.2	745.5	5.78	9.2	6.3	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	77.8	117.8	726.3	5.82	9.3	6.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	74.9	116.4	706.7	5.86	9.4	6.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	67.6	112.3	654.1	5.70	9.7	5.8	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	72.0	115.1	686.7	5.91	9.5	6.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	58.1	108.0	585.4	5.81	10.1	5.4	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	51.9	105.9	539.8	5.88	10.4	5.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	60.0	96.6	499.5	5.02	8.3	5.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	51.7	93.1	448.7	5.13	8.7	4.8	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	47.3	91.6	421.3	5.19	8.9	4.6	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	44.4	90.9	403.0	5.23	9.1	4.4	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	55.7	88.9	428.1	4.66	7.7	4.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	51.8	87.0	405.7	4.69	7.8	4.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	48.0	86.0	385.3	4.77	8.0	4.5	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	43.4	83.3	356.8	4.65	8.2	4.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	44.0	84.8	362.0	4.82	8.2	4.3	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	40.1	82.2	336.7	4.68	8.4	4.1	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	38.3	81.8	326.2	4.70	8.5	4.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	31.3	77.9	279.0	4.54	8.9	3.6	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.3	77.2	251.8	4.52	9.2	3.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	39.9	69.7	266.3	3.91	6.7	3.8	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	34.8	68.1	241.6	3.98	7.0	3.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	29.8	66.2	216.0	3.92	7.2	3.3	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	31.1	67.3	223.3	4.01	7.2	3.3	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.2	65.0	201.2	3.88	7.4	3.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	27.3	65.8	202.6	3.93	7.4	3.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	24.5	64.6	186.7	3.88	7.6	2.9	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.2	61.3	165.7	3.66	7.8	2.7	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.4	60.7	142.0	3.59	8.2	2.3	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	43.7	65.9	249.8	3.58	5.7	3.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	40.1	64.4	234.8	3.60	5.9	3.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	36.0	62.6	217.1	3.61	6.0	3.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	31.5	60.8	197.1	3.60	6.3	3.2	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	29.1	59.9	186.1	3.58	6.4	3.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	26.5	58.9	173.6	3.55	6.6	2.9	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	49.0	60.5	230.1	3.35	4.7	3.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	44.8	59.2	216.8	3.38	4.8	3.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	36.9	57.0	190.3	3.21	5.2	3.3	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	40.3	57.8	202.0	3.40	5.0	3.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	33.9	55.8	179.4	3.23	5.3	3.2	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	30.6	54.5	166.6	3.23	5.4	3.1	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	35.2	56.3	184.1	3.41	5.2	3.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	32.4	55.5	173.9	3.40	5.4	3.1	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	26.7	53.1	151.1	3.22	5.7	2.8	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	29.6	54.6	163.1	3.38	5.5	3.0	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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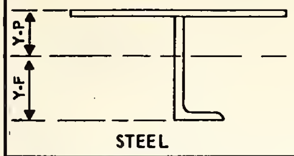
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	24.7	52.3	142.8	3.20	5.8	2.7	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	26.5	53.6	150.8	3.35	5.7	2.8	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	22.5	51.5	133.2	3.17	5.9	2.6	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	20.3	50.6	123.0	3.13	6.1	2.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	28.2	47.5	132.8	2.85	4.7	2.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	25.4	46.5	123.3	2.85	4.9	2.6	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	22.3	45.5	112.3	2.83	5.0	2.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	20.6	44.9	105.9	2.81	5.1	2.4	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	18.8	44.2	98.9	2.79	5.3	2.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	16.9	43.5	91.4	2.75	5.4	2.1	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	14.9	42.6	82.7	2.68	5.6	1.9	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	22.8	39.4	93.8	2.46	4.1	2.4	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	20.6	38.7	87.3	2.46	4.2	2.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.1	38.0	79.8	2.44	4.4	2.1	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	16.8	37.5	75.3	2.43	4.5	2.0	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.3	37.0	70.3	2.40	4.6	1.9	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.0	36.2	65.7	2.34	4.7	1.8	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	13.8	36.4	65.1	2.36	4.7	1.8	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.7	36.0	60.9	2.32	4.8	1.7	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.2	35.7	58.9	2.30	4.8	1.7	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.1	34.9	54.7	2.24	4.9	1.6	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.0	35.0	54.2	2.24	5.0	1.5	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.4	34.8	52.0	2.22	5.0	1.5	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.5	34.0	48.4	2.16	5.1	1.4	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	7.8	32.8	41.1	2.05	5.2	1.3	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	14.6	30.5	54.2	2.02	3.7	1.8	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	12.9	29.9	49.6	2.00	3.8	1.7	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	10.9	29.2	43.8	1.95	4.0	1.5	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	9.9	28.4	40.3	1.89	4.1	1.4	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	9.9	28.8	40.5	1.92	4.1	1.4	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	8.9	27.9	37.0	1.85	4.2	1.3	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.7	28.2	36.7	1.86	4.2	1.3	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	7.9	27.4	33.6	1.80	4.3	1.2	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.5	27.4	32.3	1.79	4.3	1.2	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.8	26.6	29.6	1.73	4.4	1.1	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.2	26.4	27.6	1.70	4.5	1.0	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.6	25.4	25.1	1.63	4.5	1.0	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.0	23.9	35.9	1.66	3.0	1.5	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.6	23.5	32.9	1.65	3.1	1.4	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.6	23.0	30.5	1.61	3.2	1.3	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.5	22.2	27.7	1.55	3.3	1.2	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.1	23.0	29.3	1.61	3.2	1.3	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.2	22.4	26.9	1.56	3.3	1.2	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.2	22.6	27.1	1.58	3.3	1.2	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.3	21.7	24.6	1.51	3.4	1.1	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.4	22.0	24.9	1.53	3.4	1.1	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.6	21.3	22.7	1.48	3.4	1.1	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.2	22.2	24.6	1.54	3.4	1.1	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.5	21.5	22.6	1.49	3.5	1.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	5.9	20.8	20.6	1.44	3.5	1.0	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.2	21.5	21.7	1.48	3.5	1.0	2.40	4.00	4.00	0.312	1.25
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.7	20.9	20.1	1.43	3.5	1.0	2.25	4.00	3.50	0.312	1.25



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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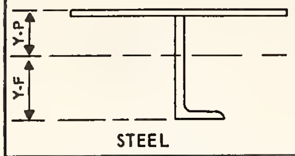
20.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
4 x 3 x 5/16 x 7.2 L	7.11	5.0	20.2	18.2	1.38	3.6	0.9	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.2	20.6	18.5	1.40	3.6	0.9	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.7	20.0	17.0	1.35	3.6	0.9	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.2	19.2	15.5	1.30	3.7	0.8	1.69	4.00	3.00	0.250	1.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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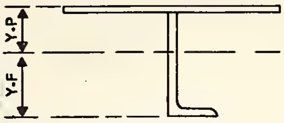
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	95.1	167.4	1,126.0	6.81	11.8	6.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	88.0	164.1	1,063.7	6.87	12.1	6.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	80.7	161.1	998.3	6.93	12.4	6.2	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	77.0	159.7	964.2	6.96	12.5	6.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	97.6	147.1	913.0	5.65	9.4	6.2	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	92.4	144.4	876.6	5.70	9.5	6.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	89.5	143.0	856.4	5.73	9.6	6.0	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	86.6	141.6	836.4	5.76	9.7	5.9	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	83.6	140.3	815.4	5.79	9.8	5.8	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	80.6	139.0	793.9	5.82	9.9	5.7	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	77.5	137.8	771.9	5.85	10.0	5.6	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	70.0	133.0	714.0	5.68	10.2	5.4	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	74.4	136.6	749.4	5.88	10.1	5.5	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	59.8	129.1	636.3	5.74	10.6	4.9	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	53.3	127.2	584.2	5.76	11.0	4.6	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	62.1	114.6	546.5	5.00	8.8	4.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	53.3	111.4	488.7	5.07	9.2	4.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	48.6	110.2	457.4	5.09	9.4	4.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	45.5	109.7	436.2	5.10	9.6	4.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	57.7	105.5	468.6	4.64	8.1	4.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	53.5	103.6	443.5	4.66	8.3	4.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	49.5	102.9	419.8	4.70	8.5	4.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	44.8	99.8	388.1	4.58	8.7	3.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	45.1	101.9	392.9	4.73	8.7	3.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	41.2	98.8	365.0	4.58	8.9	3.7	7.86	12.00	3.50	0.600	6.00
30.9 C	24.79	39.3	98.4	352.9	4.58	9.0	3.6	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.0	94.0	300.3	4.39	9.4	3.2	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	27.8	93.4	269.1	4.34	9.7	2.9	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	41.2	83.2	291.2	3.87	7.1	3.5	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	35.7	81.9	262.8	3.90	7.4	3.2	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	30.6	79.8	233.6	3.81	7.6	2.9	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	31.8	81.2	241.6	3.90	7.6	3.0	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	27.8	78.4	216.9	3.76	7.8	2.8	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	27.9	79.4	218.1	3.80	7.8	2.7	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.0	78.1	200.2	3.73	8.0	2.6	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	21.7	73.9	177.4	3.51	8.2	2.4	4.86	10.00	2.74	0.436	3.79
15.3 C	11.99	17.7	73.2	150.5	3.40	8.5	2.1	3.53	10.00	2.60	0.436	2.40
9 x 4 x 1 x 40.8 L	40.80	45.3	78.3	274.6	3.57	6.1	3.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	41.5	76.7	257.6	3.58	6.2	3.4	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	37.1	75.0	237.4	3.56	6.4	3.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	32.4	73.1	214.6	3.53	6.6	2.9	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	29.9	72.1	202.2	3.50	6.8	2.8	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.2	70.9	187.9	3.45	6.9	2.7	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	50.7	72.2	255.2	3.37	5.0	3.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	46.3	70.9	239.8	3.38	5.2	3.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	38.2	67.8	209.4	3.20	5.5	3.1	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	41.6	69.5	222.7	3.38	5.4	3.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	35.1	66.7	196.9	3.20	5.6	3.0	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	31.6	65.3	182.2	3.19	5.8	2.8	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	36.2	67.9	202.0	3.36	5.6	3.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	33.3	67.0	190.3	3.34	5.7	2.8	7.56	8.00	6.00	0.562	4.50



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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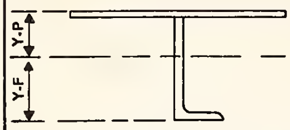
22.95# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 5/8 x 24.2 L	24.17	27.5	63.8	164.5	3.15	6.0	2.6	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	30.3	66.0	177.9	3.31	5.9	2.7	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	25.4	63.0	155.0	3.12	6.1	2.5	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.1	64.9	163.6	3.26	6.0	2.5	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.1	62.0	144.1	3.07	6.2	2.3	5.75	8.00	4.00	0.500	4.00
8 x 4 x 7/16 x 17.2 L	17.20	20.7	60.9	132.5	3.02	6.4	2.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	29.2	56.9	145.8	2.82	5.0	2.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	26.2	55.8	134.8	2.80	5.1	2.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	22.9	54.7	122.2	2.77	5.3	2.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.2	54.0	114.9	2.73	5.4	2.1	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.3	53.2	106.9	2.69	5.6	2.0	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.3	52.3	98.3	2.64	5.7	1.9	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.2	51.1	88.5	2.56	5.8	1.7	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	23.5	47.3	103.1	2.43	4.4	2.2	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.2	46.5	95.6	2.41	4.5	2.1	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	18.6	45.7	86.9	2.38	4.7	1.9	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.2	45.1	81.7	2.35	4.8	1.8	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	15.7	44.4	76.0	2.31	4.9	1.7	4.75	6.00	4.00	0.500	3.00
6 x 3 1/2 x 1/2 x 15.3 L	15.30	14.3	43.4	70.8	2.25	4.9	1.6	4.50	6.00	3.50	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.1	43.7	70.0	2.26	5.0	1.6	4.18	6.00	4.00	0.437	2.62
6 x 3 1/2 x 18.0 C	12.86	12.9	43.1	65.3	2.22	5.0	1.5	3.78	6.00	3.50	0.475	2.25
6 x 4 x 3/8 x 12.3 L	12.27	12.4	42.7	63.1	2.19	5.1	1.5	3.61	6.00	4.00	0.375	2.25
6 x 3 1/2 x 3/8 x 11.7 L	11.63	11.3	41.6	58.4	2.13	5.2	1.4	3.42	6.00	3.50	0.375	2.25
6 x 3 1/2 x 15.3 C	11.12	11.2	41.8	57.9	2.13	5.2	1.4	3.27	6.00	3.50	0.385	2.04
6 x 4 x 5/16 x 10.3 L	10.30	10.6	41.4	55.4	2.10	5.2	1.3	3.03	6.00	4.00	0.312	1.87
6 x 3 1/2 x 5/16 x 9.8 L	9.76	9.7	40.4	51.4	2.04	5.3	1.3	2.87	6.00	3.50	0.312	1.87
1/4 x 7.9 L	7.85	8.0	38.7	43.4	1.92	5.4	1.1	2.31	6.00	3.50	0.250	1.50
5 x 3 1/2 x 3/4 x 19.8 L	19.75	15.0	36.5	59.1	1.96	3.9	1.6	5.81	5.00	3.50	0.750	3.75
5/8 x 16.8 L	16.73	13.3	35.8	53.8	1.93	4.1	1.5	4.92	5.00	3.50	0.625	3.12
1/2 x 13.6 L	13.60	11.2	34.8	47.2	1.87	4.2	1.4	4.00	5.00	3.50	0.500	2.50
5 x 3 x 1/2 x 12.8 L	12.75	10.1	33.8	43.3	1.81	4.3	1.3	3.75	5.00	3.00	0.500	2.50
5 x 3 1/2 x 7/16 x 12.0 L	12.00	10.1	34.2	43.5	1.83	4.3	1.3	3.53	5.00	3.50	0.437	2.18
5 x 3 x 7/16 x 11.3 L	11.25	9.1	33.1	39.6	1.76	4.4	1.2	3.31	5.00	3.00	0.437	2.18
5 x 3 1/2 x 3/8 x 10.4 L	10.37	8.9	33.4	39.2	1.77	4.4	1.2	3.05	5.00	3.50	0.375	1.87
5 x 3 x 3/8 x 9.8 L	9.72	8.1	32.3	35.9	1.70	4.5	1.1	2.86	5.00	3.00	0.375	1.87
5 x 3 1/2 x 5/16 x 8.7 L	8.70	7.6	32.3	34.3	1.69	4.5	1.1	2.56	5.00	3.50	0.312	1.56
5 x 3 x 5/16 x 8.2 L	8.16	6.9	31.2	31.4	1.62	4.6	1.0	2.40	5.00	3.00	0.312	1.56
5 x 3 1/2 x 1/4 x 7.0 L	7.00	6.3	30.8	29.1	1.59	4.6	0.9	2.06	5.00	3.50	0.250	1.25
5 x 3 x 1/4 x 6.6 L	6.60	5.7	29.6	26.5	1.52	4.7	0.9	1.94	5.00	3.00	0.250	1.25
4 x 4 x 3/4 x 18.5 L	18.50	12.3	28.6	39.3	1.62	3.2	1.4	5.44	4.00	4.00	0.750	3.00
5/8 x 15.7 L	15.67	10.9	28.1	35.9	1.59	3.3	1.3	4.61	4.00	4.00	0.625	2.50
4 x 3 1/2 x 5/8 x 14.7 L	14.62	9.9	27.3	33.1	1.55	3.3	1.2	4.30	4.00	3.50	0.625	2.50
4 x 3 x 5/8 x 13.6 L	13.53	8.8	26.3	30.0	1.49	3.4	1.1	3.98	4.00	3.00	0.625	2.50
4 x 4 x 1/2 x 12.8 L	12.75	9.3	27.4	31.7	1.55	3.4	1.2	3.75	4.00	4.00	0.500	2.00
4 x 3 1/2 x 1/2 x 11.9 L	11.90	8.4	26.5	29.1	1.49	3.5	1.1	3.50	4.00	3.50	0.500	2.00
4 x 4 x 7/16 x 11.3 L	11.25	8.4	26.8	29.2	1.51	3.5	1.1	3.31	4.00	4.00	0.437	1.75
4 x 3 x 1/2 x 11.1 L	11.05	7.5	25.6	26.5	1.44	3.5	1.0	3.25	4.00	3.00	0.500	2.00
4 x 3 1/2 x 7/16 x 10.6 L	10.51	7.6	26.0	26.8	1.46	3.5	1.0	3.09	4.00	3.50	0.437	1.75
4 x 3 x 7/16 x 9.8 L	9.76	6.8	25.0	24.3	1.40	3.6	1.0	2.87	4.00	3.00	0.437	1.75
4 x 4 x 3/8 x 9.8 L	9.72	7.4	26.1	26.3	1.46	3.6	1.0	2.86	4.00	4.00	0.375	1.50
4 x 3 1/2 x 3/8 x 9.1 L	9.08	6.7	25.3	24.1	1.41	3.6	1.0	2.67	4.00	3.50	0.375	1.50
4 x 3 x 3/8 x 8.5 L	8.43	6.0	24.3	22.0	1.35	3.7	0.9	2.48	4.00	3.00	0.375	1.50
4 x 4 x 5/16 x 8.2 L	8.16	6.3	25.1	23.1	1.39	3.6	0.9	2.40	4.00	4.00	0.312	1.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE
[-L AND L

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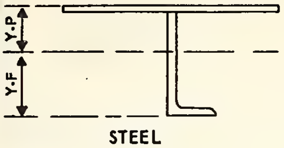
22.95# **PLATE WEIGHT**

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
4 x 3 1/2 x 5/16 x 7.7 L	7.65	5.8	24.4	21.4	1.35	3.7	0.9	2.25	4.00	3.50	0.312	1.25
4 x 3 x 5/16 x 7.2 L	7.11	5.2	23.4	19.3	1.29	3.7	0.8	2.09	4.00	3.00	0.312	1.25
4 x 4 x 1/4 x 6.6 L	6.60	5.3	23.9	19.7	1.31	3.7	0.8	1.94	4.00	4.00	0.250	1.00
4 x 3 1/2 x 1/4 x 6.2 L	6.15	4.8	23.0	18.0	1.26	3.8	0.8	1.81	4.00	3.50	0.250	1.00
4 x 3 x 1/4 x 5.8 L	5.75	4.3	22.0	16.3	1.21	3.8	0.7	1.69	4.00	3.00	0.250	1.00



PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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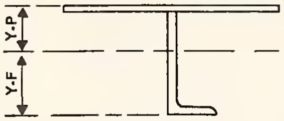
25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS LESSER	SECTION MODULUS GREATER	I	r	YF	YP	BEAM DIMENSIONS AREA	BEAM DIMENSIONS DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	98.0	194.8	1,214.5	6.77	12.4	6.2	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	90.5	191.7	1,145.3	6.81	12.7	6.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	82.8	188.9	1,072.3	6.83	12.9	5.7	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	78.8	187.7	1,034.0	6.84	13.1	5.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	101.0	169.6	989.3	5.66	9.8	5.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	95.5	167.0	949.1	5.70	9.9	5.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	92.4	165.7	926.8	5.72	10.0	5.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	89.4	164.5	904.6	5.74	10.1	5.5	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	86.2	163.2	881.2	5.76	10.2	5.4	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	83.0	162.0	857.2	5.78	10.3	5.3	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	79.7	160.9	832.6	5.80	10.5	5.2	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	72.1	155.3	769.5	5.62	10.7	5.0	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	76.3	159.9	807.3	5.81	10.6	5.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	61.3	151.7	682.4	5.63	11.1	4.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	54.4	150.1	623.7	5.61	11.5	4.2	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	64.0	134.0	590.0	4.95	9.2	4.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	54.6	131.1	524.9	4.97	9.6	4.0	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	49.6	130.1	489.4	4.97	9.9	3.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	46.4	129.7	465.3	4.96	10.0	3.6	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	59.4	123.3	506.2	4.60	8.5	4.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	55.0	121.5	478.1	4.59	8.7	3.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	50.7	120.9	450.9	4.61	8.9	3.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	45.9	117.3	416.3	4.48	9.1	3.5	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	46.1	120.1	420.5	4.61	9.1	3.5	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	42.1	116.4	390.2	4.46	9.3	3.4	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	37.6	112.1	355.1	4.30	9.5	3.2	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	40.2	116.0	376.6	4.45	9.4	3.2	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	32.7	110.9	318.7	4.24	9.8	2.9	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.2	110.3	283.8	4.14	10.1	2.6	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	42.4	97.7	314.0	3.81	7.4	3.2	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	36.6	96.4	281.6	3.80	7.7	2.9	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.2	94.0	249.1	3.69	8.0	2.7	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	32.4	95.8	257.5	3.77	7.9	2.7	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.4	92.4	230.5	3.62	8.1	2.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.4	93.6	231.6	3.66	8.2	2.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.4	92.0	211.8	3.57	8.3	2.3	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	46.7	91.5	297.7	3.54	6.4	3.3	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	42.7	89.9	278.6	3.53	6.5	3.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	38.1	88.0	255.9	3.50	6.7	2.9	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	33.2	86.0	230.3	3.44	6.9	2.7	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	30.6	84.8	216.3	3.40	7.1	2.5	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	27.7	83.5	200.4	3.34	7.2	2.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	52.3	84.7	278.8	3.36	5.3	3.3	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	47.6	83.3	261.3	3.36	5.5	3.1	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	39.4	79.4	227.1	3.16	5.8	2.9	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	42.6	81.9	241.7	3.34	5.7	3.0	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	36.1	78.2	212.9	3.15	5.9	2.7	9.73	8.00	4.00	0.875	7.00
8 x 6 x 3/4 x 28.7 L	28.70	32.4	76.8	196.4	3.12	6.1	2.6	8.44	8.00	4.00	0.750	6.00
5/8 x 28.5 L	28.42	37.0	80.1	218.2	3.30	5.9	2.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	34.0	79.1	204.9	3.26	6.0	2.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	28.1	75.0	176.4	3.06	6.3	2.4	7.11	8.00	4.00	0.625	5.00



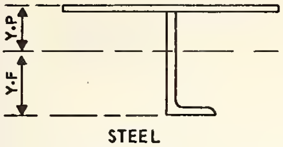
STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

30t

25.5# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 6 x 1/2 x 23.0 L	22.95	30.9	78.0	190.9	3.21	6.2	2.4	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	25.9	74.1	165.7	3.02	6.4	2.2	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	27.6	76.6	174.9	3.15	6.3	2.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	23.6	72.9	153.6	2.96	6.5	2.1	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.1	71.6	140.7	2.90	6.7	2.0	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.0	66.7	157.7	2.77	5.3	2.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	26.9	65.6	145.3	2.74	5.4	2.2	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.5	64.2	131.0	2.68	5.6	2.0	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	21.6	63.4	122.8	2.64	5.7	1.9	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	19.6	62.3	113.9	2.59	5.8	1.8	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.6	61.2	104.4	2.53	5.9	1.7	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.4	59.8	93.6	2.44	6.1	1.6	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.2	55.5	111.5	2.38	4.6	2.0	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	21.7	54.6	103.0	2.35	4.7	1.9	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.1	53.5	93.1	2.30	4.9	1.7	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.6	52.8	87.3	2.26	5.0	1.7	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.0	51.9	80.9	2.22	5.1	1.6	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.4	51.0	74.2	2.16	5.2	1.5	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	12.6	49.7	66.6	2.09	5.3	1.3	3.61	6.00	4.00	0.375	2.25



PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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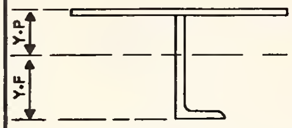
28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	100.6	225.0	1,299.1	6.70	12.9	5.8	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	92.7	222.1	1,222.4	6.70	13.2	5.5	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	84.6	219.5	1,141.2	6.69	13.5	5.2	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	80.4	218.5	1,098.6	6.68	13.7	5.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	104.2	194.4	1,064.0	5.65	10.2	5.5	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	98.3	192.0	1,019.7	5.67	10.4	5.3	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	95.0	190.8	994.9	5.69	10.5	5.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	91.8	189.6	970.3	5.70	10.6	5.1	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	88.4	188.4	944.2	5.70	10.7	5.0	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	85.0	187.3	917.6	5.71	10.8	4.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	81.6	186.3	890.0	5.72	10.9	4.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	73.9	179.8	822.0	5.53	11.1	4.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	78.1	185.3	861.7	5.72	11.0	4.6	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	62.6	176.3	724.9	5.49	11.6	4.1	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	55.3	174.9	659.5	5.44	11.9	3.8	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	65.6	155.2	631.2	4.88	9.6	4.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	55.7	152.5	558.3	4.85	10.0	3.7	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	50.5	151.6	518.6	4.82	10.3	3.4	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.1	151.2	491.7	4.79	10.4	3.3	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	60.9	142.8	541.8	4.53	8.9	3.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	56.3	140.9	510.6	4.51	9.1	3.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	51.7	140.5	479.8	4.50	9.3	3.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	46.9	136.2	442.3	4.37	9.4	3.2	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	46.9	139.8	445.6	4.47	9.5	3.2	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	42.9	135.3	413.2	4.33	9.6	3.1	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	38.3	130.3	375.5	4.16	9.8	2.9	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	40.9	134.9	398.0	4.30	9.7	2.9	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.2	128.9	335.1	4.07	10.1	2.6	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	28.6	128.0	296.8	3.95	10.4	2.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	43.4	113.2	335.3	3.73	7.7	3.0	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	37.3	111.9	298.8	3.69	8.0	2.7	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	31.8	109.0	263.0	3.56	8.3	2.4	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.0	111.3	271.8	3.64	8.2	2.4	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	28.8	107.1	242.7	3.48	8.4	2.3	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	28.8	108.6	243.6	3.51	8.4	2.2	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	25.8	106.6	222.1	3.41	8.6	2.1	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	47.9	105.8	319.7	3.49	6.7	3.0	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	43.7	104.1	298.3	3.47	6.8	2.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	38.9	102.1	273.1	3.42	7.0	2.7	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	33.8	99.7	244.7	3.34	7.2	2.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.2	98.4	229.2	3.29	7.4	2.3	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.2	96.8	211.8	3.22	7.5	2.2	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	53.6	98.3	301.4	3.33	5.6	3.1	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	48.7	96.8	281.6	3.31	5.8	2.9	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	40.4	91.9	243.9	3.11	6.0	2.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	43.5	95.2	259.6	3.28	6.0	2.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	36.9	90.6	227.9	3.09	6.2	2.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.1	89.0	209.5	3.04	6.3	2.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	37.7	93.2	233.1	3.21	6.2	2.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	34.6	92.0	218.3	3.17	6.3	2.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	28.7	86.9	187.4	2.97	6.5	2.2	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.4	90.6	202.7	3.11	6.5	2.2	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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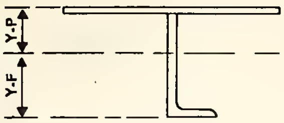
28.05# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.4	85.7	175.5	2.92	6.6	2.0	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.0	89.0	185.1	3.03	6.6	2.1	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.0	84.2	162.1	2.85	6.8	1.9	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.5	82.6	148.1	2.77	6.9	1.8	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	30.7	77.2	168.8	2.71	5.5	2.2	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	27.4	75.9	154.9	2.66	5.6	2.0	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	23.9	74.2	139.1	2.59	5.8	1.9	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.0	73.1	130.0	2.55	5.9	1.8	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.0	71.8	120.2	2.49	6.0	1.7	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	17.9	70.4	109.8	2.42	6.1	1.6	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.7	68.4	98.1	2.32	6.3	1.4	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	24.8	64.1	119.4	2.32	4.8	1.9	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.2	63.0	109.8	2.28	4.9	1.7	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.4	61.6	98.9	2.22	5.1	1.6	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	17.9	60.7	92.5	2.18	5.2	1.5	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.3	59.5	85.4	2.12	5.3	1.4	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.6	58.3	78.1	2.06	5.3	1.3	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	12.8	56.5	69.9	1.98	5.5	1.2	3.61	6.00	4.00	0.375	2.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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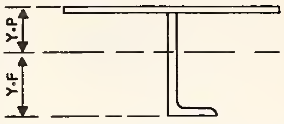
30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.³	IN.³	IN.⁴	IN.	IN.	IN.	IN.²	IN.	IN.	IN.	IN.²
18 x 4 x 58.0 C	50.14	102.8	256.8	1,376.8	6.60	13.4	5.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	94.6	254.1	1,292.5	6.58	13.7	5.1	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	86.1	251.7	1,203.1	6.54	14.0	4.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	81.8	250.7	1,156.2	6.51	14.1	4.6	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	106.9	220.8	1,134.4	5.61	10.6	5.1	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	100.7	218.4	1,085.6	5.62	10.8	5.0	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	97.3	217.2	1,058.3	5.62	10.9	4.9	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	93.9	216.1	1,031.1	5.62	11.0	4.8	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	90.4	214.9	1,002.3	5.62	11.1	4.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	86.9	213.9	972.9	5.62	11.2	4.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	83.2	212.9	942.4	5.61	11.3	4.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	75.5	205.5	869.7	5.43	11.5	4.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	79.6	212.0	911.1	5.60	11.5	4.3	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	63.7	202.0	762.9	5.34	12.0	3.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	56.2	200.6	691.0	5.26	12.3	3.4	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	67.0	177.3	668.6	4.78	10.0	3.8	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	56.7	174.6	588.2	4.72	10.4	3.4	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	51.3	173.7	544.3	4.67	10.6	3.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	47.7	173.4	514.7	4.62	10.8	3.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	62.2	163.1	574.3	4.44	9.2	3.5	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	57.4	161.1	539.9	4.41	9.4	3.4	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	52.6	160.8	505.6	4.38	9.6	3.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	47.7	155.7	465.5	4.24	9.8	3.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	47.6	160.0	467.8	4.33	9.8	2.9	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	43.6	154.7	433.5	4.19	9.9	2.8	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	38.9	148.8	393.5	4.02	10.1	2.6	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	41.5	154.3	416.8	4.15	10.0	2.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	33.7	147.1	349.5	3.90	10.4	2.4	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.0	145.8	308.0	3.77	10.6	2.1	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	44.3	129.3	354.5	3.64	8.0	2.7	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	37.9	127.8	314.1	3.57	8.3	2.5	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	32.3	124.2	275.3	3.43	8.5	2.2	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	33.4	127.0	284.4	3.50	8.5	2.2	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.2	122.0	253.5	3.34	8.7	2.1	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.2	123.6	254.0	3.36	8.7	2.1	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.1	121.1	231.0	3.26	8.8	1.9	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	49.0	120.7	339.8	3.43	6.9	2.8	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	44.6	118.8	316.3	3.39	7.1	2.7	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	39.7	116.5	288.6	3.33	7.3	2.5	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	34.4	113.7	257.5	3.24	7.5	2.3	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	31.7	112.1	240.7	3.18	7.6	2.1	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	28.7	110.1	221.8	3.10	7.7	2.0	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	54.8	112.4	322.3	3.28	5.9	2.9	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	49.7	110.8	300.2	3.25	6.0	2.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	41.3	104.7	259.2	3.05	6.3	2.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	44.3	109.0	275.7	3.21	6.2	2.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	37.7	103.2	241.6	3.01	6.4	2.3	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	33.7	101.3	221.3	2.96	6.6	2.2	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	38.3	106.5	246.5	3.13	6.4	2.3	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	35.1	105.0	230.3	3.07	6.6	2.2	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	29.2	98.8	197.1	2.87	6.8	2.0	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	31.9	103.4	213.2	3.00	6.7	2.1	6.75	8.00	6.00	0.500	4.00



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
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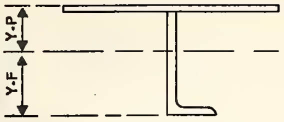
30.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	26.9	97.4	184.2	2.81	6.9	1.9	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	28.4	101.3	194.0	2.92	6.8	1.9	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	24.3	95.5	169.7	2.74	7.0	1.8	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	21.8	93.5	154.6	2.65	7.1	1.7	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	31.3	87.9	178.9	2.64	5.7	2.0	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.0	86.2	163.6	2.58	5.9	1.9	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	24.3	84.1	146.3	2.50	6.0	1.7	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	22.4	82.8	136.5	2.45	6.1	1.6	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.3	81.1	125.8	2.38	6.2	1.6	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.2	79.2	114.6	2.31	6.3	1.4	4.62	7.00	4.00	0.437	3.06
3/8 x 13.6 L	13.53	15.9	76.7	102.1	2.21	6.4	1.3	3.98	7.00	4.00	0.375	2.62
6 x 4 x 7/8 x 27.2 L	27.13	25.3	72.7	126.6	2.26	5.0	1.7	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	22.6	71.3	116.0	2.21	5.1	1.6	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	19.8	69.6	104.0	2.14	5.3	1.5	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.2	68.4	97.0	2.09	5.3	1.4	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	16.5	66.9	89.5	2.03	5.4	1.3	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	14.8	65.2	81.6	1.97	5.5	1.3	4.18	6.00	4.00	0.437	2.62
3/8 x 12.3 L	12.27	13.0	62.9	72.8	1.88	5.6	1.2	3.61	6.00	4.00	0.375	2.25



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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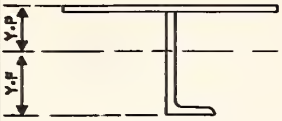
35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	106.6	326.7	1,516.5	6.34	14.2	4.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	97.7	323.9	1,416.8	6.28	14.5	4.4	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	88.6	321.5	1,311.4	6.19	14.8	4.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	84.0	320.4	1,256.3	6.14	15.0	3.9	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	111.6	278.7	1,265.1	5.48	11.3	4.5	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	104.9	276.3	1,206.7	5.46	11.5	4.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	101.2	275.1	1,174.1	5.45	11.6	4.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	97.5	273.9	1,141.7	5.43	11.7	4.2	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	93.7	272.8	1,107.4	5.41	11.8	4.1	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	89.9	271.7	1,072.2	5.39	11.9	3.9	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	86.0	270.7	1,035.9	5.36	12.0	3.8	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	78.1	261.0	954.8	5.18	12.2	3.7	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	82.0	269.8	998.6	5.33	12.2	3.7	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	65.5	257.0	828.9	5.03	12.6	3.2	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	57.5	254.9	744.9	4.90	13.0	2.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	69.4	225.0	735.5	4.56	10.6	3.3	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	58.3	221.7	640.2	4.44	11.0	2.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	52.5	220.3	588.6	4.35	11.2	2.7	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	48.8	219.6	554.1	4.28	11.4	2.5	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	64.4	206.6	632.3	4.24	9.8	3.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	59.3	204.2	591.9	4.18	10.0	2.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	54.2	203.6	550.7	4.12	10.2	2.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	49.1	196.8	506.0	3.98	10.3	2.6	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	48.8	202.3	506.2	4.04	10.4	2.5	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	44.7	195.2	468.6	3.90	10.5	2.4	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	40.0	187.2	424.4	3.74	10.6	2.3	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	42.5	194.4	449.1	3.85	10.6	2.3	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	34.5	184.1	374.0	3.59	10.8	2.0	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	29.5	181.2	327.0	3.43	11.1	1.8	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	45.8	162.9	388.6	3.44	8.5	2.4	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	38.9	160.5	340.8	3.33	8.8	2.1	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.1	155.1	296.6	3.17	9.0	1.9	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.2	158.8	306.2	3.23	8.9	1.9	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	29.9	151.6	272.0	3.07	9.1	1.8	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	29.9	153.5	272.1	3.09	9.1	1.8	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	26.7	149.7	246.3	2.97	9.2	1.6	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	50.9	152.0	376.3	3.28	7.4	2.5	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	46.2	149.6	348.4	3.22	7.5	2.3	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	41.0	146.3	316.0	3.13	7.7	2.2	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	35.4	142.3	280.0	3.02	7.9	2.0	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	32.5	139.8	260.7	2.95	8.0	1.9	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	29.4	136.8	239.1	2.86	8.1	1.7	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	56.8	142.5	360.3	3.17	6.3	2.5	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	51.4	140.2	333.7	3.11	6.5	2.4	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	42.9	131.5	286.9	2.91	6.7	2.2	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	45.7	137.6	304.5	3.04	6.7	2.2	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	39.0	129.4	266.0	2.85	6.8	2.1	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	34.8	126.7	242.2	2.78	7.0	1.9	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	39.4	134.0	270.2	2.94	6.9	2.0	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	36.1	131.7	251.3	2.87	7.0	1.9	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	30.0	122.8	214.2	2.67	7.1	1.7	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	32.7	129.1	231.5	2.79	7.1	1.8	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	27.6	120.6	199.4	2.60	7.2	1.7	6.43	8.00	4.00	0.562	4.50



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE E-L AND L

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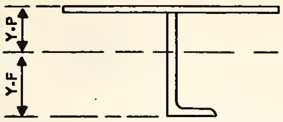
35.7# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. x IN. x IN. x LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 6 x 7/16 x 20.2 L	20.16	29.1	125.8	209.6	2.69	7.2	1.7	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.0	117.8	183.0	2.52	7.3	1.6	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.3	114.5	165.9	2.43	7.4	1.4	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	32.4	109.6	197.1	2.49	6.1	1.8	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	28.9	107.1	179.1	2.42	6.2	1.7	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	25.1	103.8	159.1	2.32	6.3	1.5	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.0	101.6	147.8	2.26	6.4	1.5	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	20.9	99.0	135.7	2.19	6.5	1.4	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	18.7	96.0	123.2	2.11	6.6	1.3	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	26.2	90.0	139.6	2.12	5.3	1.6	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	23.4	87.8	127.2	2.06	5.4	1.4	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	20.4	84.9	113.3	1.98	5.5	1.3	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	18.8	83.0	105.3	1.93	5.6	1.3	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.0	80.6	96.7	1.87	5.7	1.2	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.3	78.0	87.9	1.80	5.7	1.1	4.18	6.00	4.00	0.437	2.62



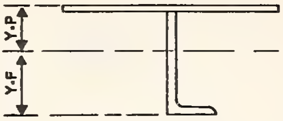
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

30t

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	109.5	402.4	1,635.7	6.05	14.9	4.1	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	100.2	399.1	1,521.4	5.95	15.2	3.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	90.6	396.0	1,401.2	5.83	15.5	3.5	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	85.8	394.5	1,338.6	5.76	15.6	3.4	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	115.4	341.8	1,380.7	5.30	12.0	4.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	108.2	339.2	1,312.9	5.26	12.1	3.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	104.3	337.8	1,275.0	5.23	12.2	3.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	100.4	336.5	1,237.4	5.20	12.3	3.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	96.4	335.1	1,197.7	5.17	12.4	3.6	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	92.3	333.8	1,157.0	5.13	12.5	3.5	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	88.2	332.5	1,115.1	5.09	12.6	3.4	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	80.3	320.1	1,026.8	4.91	12.8	3.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	84.0	331.2	1,072.3	5.04	12.8	3.2	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	67.0	314.3	883.6	4.71	13.2	2.8	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	58.6	310.7	789.0	4.55	13.5	2.5	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	71.3	275.2	792.5	4.33	11.1	2.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	59.6	270.2	683.5	4.16	11.5	2.5	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	53.6	267.7	625.2	4.05	11.7	2.3	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	49.7	266.0	586.3	3.97	11.8	2.2	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	66.2	252.1	681.9	4.02	10.3	2.7	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	60.9	248.9	635.8	3.94	10.4	2.6	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	55.4	247.4	588.5	3.86	10.6	2.4	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	50.3	238.5	539.8	3.72	10.7	2.3	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	49.8	244.9	538.0	3.76	10.8	2.2	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	45.7	235.7	497.7	3.63	10.9	2.1	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	40.9	225.2	450.2	3.47	11.0	2.0	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	43.4	234.2	475.9	3.57	11.0	2.0	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	35.2	219.8	394.2	3.31	11.2	1.8	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.1	214.2	342.6	3.14	11.4	1.6	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	47.0	197.0	417.6	3.23	8.9	2.1	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	39.9	192.7	363.3	3.10	9.1	1.9	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	33.8	184.7	314.5	2.93	9.3	1.7	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	34.9	189.3	324.3	2.99	9.3	1.7	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	30.6	179.7	287.5	2.83	9.4	1.6	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	30.5	181.7	287.2	2.84	9.4	1.6	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.2	175.9	259.2	2.72	9.5	1.5	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	52.4	184.3	408.1	3.12	7.8	2.2	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	47.5	180.8	376.2	3.04	7.9	2.1	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	42.1	176.1	339.5	2.94	8.1	1.9	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	36.3	170.1	299.1	2.82	8.2	1.8	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	33.3	166.5	277.7	2.74	8.3	1.7	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.1	162.0	253.9	2.65	8.4	1.6	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	58.5	173.5	393.7	3.03	6.7	2.3	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	52.8	170.3	362.8	2.96	6.9	2.1	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	44.2	158.6	311.2	2.75	7.0	2.0	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	46.9	166.5	329.3	2.87	7.0	2.0	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	40.2	155.5	287.2	2.69	7.2	1.8	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	35.7	151.5	260.3	2.60	7.3	1.7	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	40.4	161.0	290.4	2.75	7.2	1.8	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	36.9	157.6	269.2	2.68	7.3	1.7	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	30.8	145.8	229.0	2.48	7.4	1.6	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	33.4	153.7	247.2	2.59	7.4	1.6	6.75	8.00	6.00	0.500	4.00

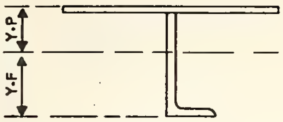


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

40.8# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	28.3	142.5	212.5	2.42	7.5	1.5	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	29.7	148.8	222.9	2.49	7.5	1.5	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	25.6	138.2	194.5	2.33	7.6	1.4	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	22.9	133.3	175.8	2.24	7.7	1.3	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	33.4	130.8	213.0	2.34	6.4	1.6	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	29.7	126.9	192.7	2.26	6.5	1.5	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	25.8	122.0	170.3	2.16	6.6	1.4	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	23.7	118.8	157.8	2.10	6.7	1.3	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	21.4	115.0	144.5	2.02	6.7	1.3	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.2	110.6	130.7	1.94	6.8	1.2	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	27.1	106.4	151.1	1.99	5.6	1.4	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	24.2	103.1	137.1	1.93	5.7	1.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	21.1	98.8	121.6	1.84	5.8	1.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	19.4	95.9	112.8	1.79	5.8	1.2	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	17.6	92.5	103.3	1.72	5.9	1.1	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	15.7	88.7	93.6	1.66	5.9	1.1	4.18	6.00	4.00	0.437	2.62



STEEL

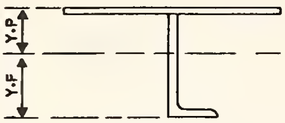
PROPERTIES OF COMBINED BEAM AND PLATE

[-L AND L

30t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	112.0	481.7	1,737.3	5.74	15.5	3.6	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	102.2	477.1	1,609.8	5.62	15.8	3.4	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	92.3	472.5	1,476.3	5.48	16.0	3.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	87.2	470.1	1,407.2	5.39	16.1	3.0	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	118.6	408.4	1,482.4	5.10	12.5	3.6	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	111.1	405.1	1,405.5	5.04	12.7	3.5	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	106.9	403.3	1,362.6	5.00	12.7	3.4	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	102.8	401.5	1,320.2	4.96	12.8	3.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	98.6	399.7	1,275.4	4.92	12.9	3.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	94.3	397.8	1,229.7	4.87	13.0	3.1	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	90.0	395.9	1,182.8	4.82	13.1	3.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	82.0	380.5	1,088.3	4.64	13.3	2.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	85.7	394.0	1,134.8	4.76	13.2	2.9	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	68.2	371.6	929.6	4.41	13.6	2.5	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	59.6	365.3	825.9	4.23	13.9	2.3	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	72.9	326.0	841.4	4.09	11.5	2.6	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	60.7	318.1	720.3	3.89	11.9	2.3	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	54.5	313.6	656.0	3.77	12.0	2.1	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	50.5	310.4	613.5	3.68	12.1	2.0	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	67.8	297.9	724.8	3.80	10.7	2.4	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	62.2	293.3	673.6	3.71	10.8	2.3	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	56.5	290.3	620.8	3.62	11.0	2.1	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	51.3	279.0	568.8	3.48	11.1	2.0	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	50.7	285.8	565.1	3.50	11.1	2.0	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	46.6	274.3	522.6	3.38	11.2	1.9	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	41.7	261.1	472.3	3.23	11.3	1.8	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	44.2	271.8	498.8	3.32	11.3	1.8	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	35.8	252.4	411.7	3.06	11.5	1.6	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	30.5	243.2	356.2	2.89	11.7	1.5	4.81	12.00	2.94	0.501	3.36
10 x 4 x 41.1 C	33.68	48.1	230.0	442.9	3.04	9.2	1.9	9.91	10.00	4.32	0.575	7.94
33.6 C	26.43	40.7	222.9	382.8	2.89	9.4	1.7	7.77	10.00	4.10	0.575	5.75
10 x 3 1/2 x 28.3 C	22.26	34.5	211.7	330.1	2.72	9.6	1.6	6.55	10.00	3.50	0.575	4.75
10 x 4 x 28.5 C	21.62	35.6	217.1	340.2	2.77	9.6	1.6	6.36	10.00	3.95	0.575	4.25
10 x 3 1/2 x 25.3 C	19.91	31.2	204.7	301.2	2.62	9.7	1.5	5.86	10.00	3.55	0.500	4.25
10 x 3 1/2 x 24.9 C	19.06	31.1	206.7	300.5	2.63	9.7	1.5	5.61	10.00	3.40	0.575	3.75
21.9 C	16.68	27.7	198.6	270.6	2.51	9.8	1.4	4.91	10.00	3.45	0.500	3.25
9 x 4 x 1 x 40.8 L	40.80	53.8	216.0	436.1	2.95	8.1	2.0	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	48.7	211.1	400.6	2.87	8.2	1.9	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	43.1	204.4	360.2	2.76	8.4	1.8	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	37.1	196.0	316.0	2.63	8.5	1.6	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	34.1	190.9	292.7	2.55	8.6	1.5	7.00	9.00	4.00	0.562	5.06
9 x 4 x 1/2 x 21.3 L	21.25	30.8	184.6	267.0	2.46	8.7	1.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	60.0	204.4	423.3	2.88	7.1	2.1	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	54.1	199.8	388.6	2.80	7.2	1.9	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	45.4	184.7	332.8	2.61	7.3	1.8	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	48.0	194.2	351.2	2.71	7.3	1.8	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	41.2	180.3	306.1	2.53	7.4	1.7	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	36.7	174.5	276.4	2.44	7.5	1.6	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	41.3	186.4	308.2	2.58	7.5	1.7	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	37.7	181.6	285.0	2.50	7.6	1.6	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	31.6	166.5	242.2	2.32	7.7	1.5	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	34.2	176.1	261.0	2.42	7.6	1.5	6.75	8.00	6.00	0.500	4.00



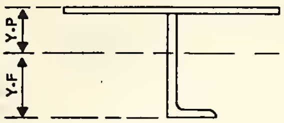
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

30t

45.9# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 9/16 x 21.9 L	21.86	29.0	161.9	224.3	2.25	7.7	1.4	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	30.4	169.1	234.8	2.31	7.7	1.4	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	26.2	156.1	204.9	2.17	7.8	1.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	23.4	149.4	184.8	2.07	7.9	1.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	34.4	150.5	227.4	2.20	6.6	1.5	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	30.6	145.0	205.0	2.12	6.7	1.4	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	26.5	138.1	180.5	2.02	6.8	1.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	24.3	133.7	167.0	1.95	6.9	1.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	22.0	128.6	152.7	1.88	6.9	1.2	5.25	7.00	4.00	0.500	3.50
7 x 4 x 7/16 x 15.8 L	15.71	19.7	122.7	137.9	1.80	7.0	1.1	4.62	7.00	4.00	0.437	3.06
6 x 4 x 7/8 x 27.2 L	27.13	27.9	121.3	161.8	1.88	5.8	1.3	7.98	6.00	4.00	0.875	5.25
3/4 x 23.6 L	23.60	24.9	116.6	146.4	1.81	5.9	1.3	6.94	6.00	4.00	0.750	4.50
5/8 x 20.0 L	19.92	21.7	110.7	129.4	1.72	6.0	1.2	5.86	6.00	4.00	0.625	3.75
9/16 x 18.1 L	18.05	20.0	106.9	119.8	1.66	6.0	1.1	5.31	6.00	4.00	0.562	3.37
1/2 x 16.2 L	16.15	18.1	102.4	109.7	1.60	6.1	1.1	4.75	6.00	4.00	0.500	3.00
6 x 4 x 7/16 x 14.3 L	14.21	16.3	97.4	99.3	1.53	6.1	1.0	4.18	6.00	4.00	0.437	2.62



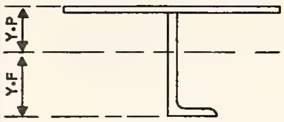
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

30t

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	114.0	562.8	1,825.5	5.44	16.0	3.2	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	103.9	556.3	1,686.0	5.31	16.2	3.0	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	93.7	549.1	1,540.7	5.15	16.4	2.8	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	88.5	545.3	1,465.8	5.06	16.6	2.7	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	121.4	477.2	1,572.7	4.88	13.0	3.3	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	113.5	472.8	1,487.3	4.81	13.1	3.1	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	109.2	470.3	1,439.8	4.76	13.2	3.1	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	104.9	467.8	1,392.9	4.72	13.3	3.0	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	100.5	465.1	1,343.5	4.67	13.4	2.9	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	96.1	462.4	1,293.2	4.61	13.5	2.8	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	91.7	459.4	1,241.7	4.55	13.5	2.7	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	83.6	440.6	1,142.0	4.38	13.7	2.6	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	87.2	456.4	1,189.2	4.49	13.6	2.6	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	69.4	427.1	969.6	4.14	14.0	2.3	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	60.4	417.1	857.9	3.95	14.2	2.1	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	74.3	376.0	884.5	3.86	11.9	2.4	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	61.8	363.9	752.6	3.65	12.2	2.1	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	55.4	356.6	683.2	3.52	12.3	1.9	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	51.3	351.4	637.4	3.43	12.4	1.8	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	69.2	342.6	762.7	3.59	11.0	2.2	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	63.4	336.1	707.1	3.50	11.1	2.1	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	57.5	331.0	649.4	3.39	11.3	2.0	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	52.3	317.0	594.6	3.26	11.4	1.9	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	51.5	323.9	589.2	3.27	11.4	1.8	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	47.4	310.0	544.8	3.15	11.5	1.8	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	42.5	293.8	492.1	3.01	11.6	1.7	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	44.9	306.1	519.3	3.10	11.6	1.7	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	36.4	281.2	427.5	2.84	11.7	1.5	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.1	267.7	368.7	2.67	11.9	1.4	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	41.5	250.4	400.6	2.71	9.7	1.6	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	35.3	226.7	343.5	2.51	9.7	1.5	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	36.3	241.5	354.7	2.58	9.8	1.5	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	30.1	214.9	297.4	2.37	9.9	1.4	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	31.7	228.1	312.9	2.44	9.9	1.4	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	28.3	217.6	281.3	2.33	10.0	1.3	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	24.9	200.2	249.4	2.20	10.0	1.2	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	44.0	230.6	379.0	2.60	8.6	1.6	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	37.9	219.2	331.5	2.46	8.7	1.5	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	34.8	212.5	306.6	2.39	8.8	1.4	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	31.4	204.1	279.2	2.29	8.9	1.4	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	61.4	234.2	450.2	2.74	7.3	1.9	13.00	8.00	6.00	1.000	8.00
x 7/8 x 39.1 L	39.03	55.4	227.9	412.0	2.66	7.4	1.8	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	46.6	209.3	352.6	2.47	7.6	1.7	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	49.1	220.1	371.2	2.56	7.6	1.7	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	42.2	203.2	323.5	2.39	7.7	1.6	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	37.5	195.4	291.3	2.29	7.8	1.5	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	42.2	209.6	324.6	2.42	7.7	1.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	38.5	203.1	299.6	2.35	7.8	1.5	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	32.3	184.8	254.6	2.17	7.9	1.4	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	34.9	195.7	273.9	2.26	7.9	1.4	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	29.7	178.7	235.5	2.10	7.9	1.3	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	31.0	186.6	246.0	2.16	7.9	1.3	5.93	8.00	6.00	0.437	3.50

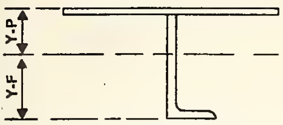


STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

51.0# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
8 x 4 x 1/2 x 19.6 L	19.55	26.9	171.2	214.8	2.02	8.0	1.3	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	24.0	162.7	193.6	1.93	8.1	1.2	5.06	8.00	4.00	0.437	3.50
7 x 4 x 7/8 x 30.2 L	30.12	35.3	168.3	240.9	2.08	6.8	1.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	31.4	161.0	216.7	1.99	6.9	1.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	27.2	152.0	190.4	1.89	7.0	1.3	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	25.0	146.4	176.0	1.83	7.0	1.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	22.6	139.8	160.7	1.76	7.1	1.1	5.25	7.00	4.00	0.500	3.50



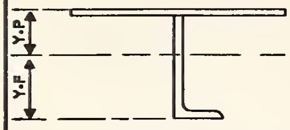
STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

30t

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	115.9	643.0	1,902.4	5.16	16.4	3.0	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	105.5	633.5	1,752.3	5.01	16.6	2.8	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	95.0	622.9	1,596.8	4.85	16.8	2.6	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	89.7	617.0	1,516.9	4.75	16.9	2.5	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	123.9	546.0	1,653.1	4.67	13.3	3.0	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	115.7	539.9	1,559.8	4.59	13.5	2.9	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	111.2	536.4	1,508.1	4.54	13.6	2.8	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	106.8	532.9	1,457.2	4.49	13.6	2.7	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	102.3	529.1	1,403.6	4.43	13.7	2.7	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	97.7	525.0	1,349.2	4.37	13.8	2.6	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	93.1	520.8	1,293.6	4.31	13.9	2.5	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	85.0	498.3	1,189.4	4.14	14.0	2.4	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	88.5	516.3	1,237.1	4.24	14.0	2.4	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	70.4	478.9	1,005.1	3.89	14.3	2.1	9.83	15.00	3.52	0.650	7.80
15 x 3 3/8 x 33.9 C	27.58	61.3	464.1	886.5	3.70	14.5	1.9	8.11	15.00	3.40	0.650	6.00
13 x 4 x 50.0 C	41.96	75.7	423.3	923.0	3.66	12.2	2.2	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	62.8	405.9	781.6	3.44	12.4	1.9	9.53	13.00	4.18	0.610	7.28
35.0 C	27.64	56.2	395.2	707.7	3.30	12.6	1.8	8.13	13.00	4.07	0.610	5.81
31.8 C	24.59	52.0	387.5	659.2	3.21	12.7	1.7	7.23	13.00	4.00	0.610	4.87
12 x 4 x 50.0 C	41.60	70.5	384.7	796.9	3.40	11.3	2.1	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	64.6	375.9	737.2	3.30	11.4	2.0	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	58.5	368.0	675.3	3.19	11.5	1.8	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	53.2	351.2	618.0	3.07	11.6	1.8	9.00	12.00	3.60	0.600	7.20
12 x 4 x 35.0 C	27.45	52.4	357.7	611.1	3.07	11.7	1.7	8.07	12.00	3.77	0.700	5.60
12 x 3 1/2 x 32.9 C	26.72	48.2	341.4	565.1	2.96	11.7	1.7	7.86	12.00	3.50	0.600	6.00
12 x 3 x 30.0 C	25.34	43.3	322.2	510.5	2.82	11.8	1.6	7.45	12.00	3.17	0.501	6.12
12 x 3 1/2 x 30.9 C	24.79	45.7	336.0	538.1	2.90	11.8	1.6	7.29	12.00	3.45	0.600	5.40
12 x 3 x 25.0 C	20.55	37.1	305.3	442.3	2.66	11.9	1.4	6.04	12.00	3.05	0.501	4.64
20.7 C	16.35	31.6	287.4	380.7	2.49	12.1	1.3	4.81	12.00	2.94	0.501	3.36
10 x 4 x 33.6 C	26.43	42.3	274.2	417.2	2.54	9.9	1.5	7.77	10.00	4.10	0.575	5.75
10 x 2 5/8 x 30.0 C	26.07	36.1	247.3	358.3	2.36	9.9	1.4	7.67	10.00	3.03	0.436	6.73
10 x 4 x 28.5 C	21.62	37.0	262.1	368.5	2.42	10.0	1.4	6.36	10.00	3.95	0.575	4.25
10 x 2 5/8 x 25.0 C	21.29	30.8	232.0	309.5	2.22	10.0	1.3	6.26	10.00	2.89	0.436	5.26
10 x 3 1/2 x 24.9 C	19.06	32.3	245.7	324.8	2.28	10.1	1.3	5.61	10.00	3.40	0.575	3.75
10 x 3 1/2 x 21.9 C	16.68	28.8	232.7	291.8	2.18	10.1	1.3	4.91	10.00	3.45	0.500	3.25
10 x 2 5/8 x 20.0 C	16.51	25.5	213.4	259.1	2.05	10.2	1.2	4.86	10.00	2.74	0.436	3.79
9 x 4 x 3/4 x 31.3 L	31.25	45.0	253.8	396.7	2.45	8.8	1.6	9.19	9.00	4.00	0.750	6.75
5/8 x 26.3 L	26.28	38.8	239.3	346.2	2.32	8.9	1.4	7.73	9.00	4.00	0.625	5.62
9/16 x 23.8 L	23.80	35.6	230.8	319.9	2.24	9.0	1.4	7.00	9.00	4.00	0.562	5.06
1/2 x 21.3 L	21.25	32.2	220.4	291.1	2.15	9.1	1.3	6.25	9.00	4.00	0.500	4.50
8 x 6 x 1 x 44.2 L	44.20	62.8	262.0	475.2	2.61	7.6	1.8	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	56.6	253.6	433.9	2.52	7.7	1.7	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	47.8	231.6	371.3	2.34	7.8	1.6	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	50.2	243.4	389.9	2.42	7.8	1.6	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	43.3	223.7	340.1	2.26	7.9	1.5	9.73	8.00	4.00	0.875	7.00
8 x 4 x 3/4 x 28.7 L	28.70	38.5	213.6	305.7	2.17	7.9	1.4	8.44	8.00	4.00	0.750	6.00
8 x 6 x 5/8 x 28.5 L	28.42	43.1	229.8	340.2	2.29	7.9	1.5	8.36	8.00	6.00	0.625	5.00
9/16 x 25.7 L	25.70	39.4	221.6	313.6	2.21	8.0	1.4	7.56	8.00	6.00	0.562	4.50
8 x 4 x 5/8 x 24.2 L	24.17	33.2	200.4	266.7	2.04	8.0	1.3	7.11	8.00	4.00	0.625	5.00
8 x 6 x 1/2 x 23.0 L	22.95	35.7	212.3	286.4	2.12	8.0	1.3	6.75	8.00	6.00	0.500	4.00
8 x 4 x 9/16 x 21.9 L	21.86	30.4	192.7	246.5	1.98	8.1	1.3	6.43	8.00	4.00	0.562	4.50
8 x 6 x 7/16 x 20.2 L	20.16	31.7	201.1	257.0	2.03	8.1	1.3	5.93	8.00	6.00	0.437	3.50
8 x 4 x 1/2 x 19.6 L	19.55	27.6	183.6	224.7	1.90	8.2	1.2	5.75	8.00	4.00	0.500	4.00
7/16 x 17.2 L	17.20	24.7	173.4	202.4	1.81	8.2	1.2	5.06	8.00	4.00	0.437	3.50

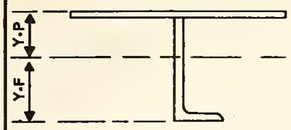


STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

56.1# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
7 x 4 x 7/8 x 30.2 L	30.12	36.3	183.9	254.1	1.97	7.0	1.4	8.86	7.00	4.00	0.875	6.12
3/4 x 26.2 L	26.15	32.3	174.8	228.3	1.88	7.1	1.3	7.69	7.00	4.00	0.750	5.25
5/8 x 22.1 L	22.03	28.0	163.6	200.2	1.78	7.2	1.2	6.48	7.00	4.00	0.625	4.37
9/16 x 20.0 L	19.96	25.7	156.8	185.0	1.72	7.2	1.2	5.87	7.00	4.00	0.562	3.93
1/2 x 17.9 L	17.85	23.3	149.0	169.0	1.65	7.2	1.1	5.25	7.00	4.00	0.500	3.50



STEEL

PROPERTIES OF
COMBINED BEAM AND PLATE
[-L AND L

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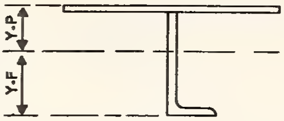
61.2# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE		SHEAR AREA
										WIDTH	THICK	
IN.× IN.× IN.× LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	117.6	721.0	1,971.2	4.90	16.8	2.7	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	106.9	707.8	1,811.7	4.74	16.9	2.6	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	96.2	692.7	1,647.0	4.57	17.1	2.4	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	90.8	684.3	1,562.7	4.48	17.2	2.3	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	126.1	613.7	1,725.9	4.46	13.7	2.8	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	117.7	605.5	1,625.5	4.37	13.8	2.7	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	113.1	600.8	1,570.0	4.32	13.9	2.6	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	108.6	595.9	1,515.4	4.27	14.0	2.5	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	103.9	590.6	1,458.1	4.21	14.0	2.5	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	99.2	584.9	1,399.9	4.15	14.1	2.4	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	94.5	578.9	1,340.7	4.08	14.2	2.3	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	86.4	552.7	1,232.6	3.92	14.3	2.2	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	89.8	572.6	1,280.6	4.01	14.3	2.2	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	71.4	526.1	1,037.6	3.66	14.5	2.0	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	77.0	467.4	958.5	3.46	12.4	2.1	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	63.8	443.7	808.6	3.24	12.7	1.8	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	71.8	423.6	828.7	3.22	11.5	2.0	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	65.7	412.1	765.4	3.12	11.6	1.9	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	59.5	401.1	699.6	3.01	11.8	1.7	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	54.2	381.5	640.2	2.89	11.8	1.7	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	51.3	313.7	507.2	2.56	9.9	1.6	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	57.6	299.8	507.7	2.53	8.8	1.7	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	52.1	288.6	463.4	2.44	8.9	1.6	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	46.0	274.1	413.9	2.32	9.0	1.5	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	64.3	287.6	499.1	2.49	7.8	1.7	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	57.9	276.9	454.8	2.40	7.9	1.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	49.0	251.5	389.6	2.23	8.0	1.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	51.3	264.2	408.0	2.30	8.0	1.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	44.4	241.7	356.3	2.15	8.0	1.5	9.73	8.00	4.00	0.875	7.00



STEEL

PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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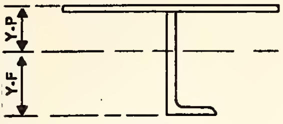
71.4# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	120.7	863.2	2,091.4	4.43	17.3	2.4	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	109.7	840.4	1,915.8	4.27	17.5	2.3	13.01	18.00	4.10	0.625	10.80
45.8 C	38.32	98.5	814.3	1,735.8	4.10	17.6	2.1	11.27	18.00	4.00	0.625	9.00
42.7 C	35.37	92.9	799.7	1,644.1	4.01	17.7	2.1	10.40	18.00	3.95	0.625	8.10
15 x 4 x 75.0 C	64.99	130.2	740.2	1,854.8	4.09	14.2	2.5	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	121.4	726.3	1,741.9	3.99	14.4	2.4	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	116.6	718.3	1,679.8	3.94	14.4	2.3	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	111.9	710.0	1,618.9	3.88	14.5	2.3	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	107.0	700.9	1,555.1	3.82	14.5	2.2	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	102.1	691.3	1,490.6	3.75	14.6	2.2	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	97.2	681.1	1,425.2	3.69	14.7	2.1	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	89.0	647.1	1,310.6	3.54	14.7	2.0	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	92.3	670.1	1,359.0	3.61	14.7	2.0	12.16	15.00	4.00	0.797	9.37
15 x 3 3/8 x 40.0 C	33.44	73.5	604.3	1,097.6	3.28	14.9	1.8	9.83	15.00	3.52	0.650	7.80
13 x 4 x 50.0 C	41.96	79.6	542.9	1,023.9	3.13	12.9	1.9	12.34	13.00	4.41	0.610	10.23
40.0 C	32.40	65.9	505.2	859.5	2.91	13.0	1.7	9.53	13.00	4.18	0.610	7.28
12 x 4 x 50.0 C	41.60	74.4	489.7	888.0	2.92	11.9	1.8	12.24	12.00	4.13	0.700	10.02
45.0 C	37.16	68.1	472.3	818.5	2.82	12.0	1.7	10.93	12.00	4.00	0.700	8.40
40.0 C	32.19	61.6	454.5	746.1	2.71	12.1	1.6	9.47	12.00	3.89	0.700	7.08
12 x 3 1/2 x 37.0 C	30.60	56.2	429.7	683.2	2.60	12.2	1.6	9.00	12.00	3.60	0.600	7.20
10 x 4 x 41.1 C	33.68	53.6	353.8	547.2	2.32	10.2	1.5	9.91	10.00	4.32	0.575	7.94
9 x 4 x 1 x 40.8 L	40.80	60.4	342.4	551.8	2.30	9.1	1.6	12.00	9.00	4.00	1.000	9.00
7/8 x 36.1 L	36.07	54.6	326.5	502.9	2.22	9.2	1.5	10.61	9.00	4.00	0.875	7.87
3/4 x 31.3 L	31.25	48.3	306.7	448.7	2.11	9.3	1.5	9.19	9.00	4.00	0.750	6.75
8 x 6 x 1 x 44.2 L	44.20	67.3	331.3	545.6	2.28	8.1	1.6	13.00	8.00	6.00	1.000	8.00
7/8 x 39.1 L	39.03	60.7	315.9	496.3	2.19	8.2	1.6	11.48	8.00	6.00	0.875	7.00
8 x 4 x 1 x 37.4 L	37.40	51.7	284.7	426.4	2.04	8.3	1.5	11.00	8.00	4.00	1.000	8.00
8 x 6 x 3/4 x 33.8 L	33.80	53.8	298.0	444.5	2.09	8.3	1.5	9.94	8.00	6.00	0.750	6.00
8 x 4 x 7/8 x 33.1 L	33.08	46.9	271.0	389.6	1.96	8.3	1.4	9.73	8.00	4.00	0.875	7.00



PROPERTIES OF COMBINED BEAM AND PLATE [-L AND L

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81.6# PLATE WEIGHT

NOMINAL SIZE	WEIGHT PER FOOT	SECTION MODULUS		I	r	YF	YP	BEAM DIMENSIONS				
		LESSER	GREATER					AREA	DEPTH	FLANGE WIDTH	FLANGE THICK	SHEAR AREA
IN. × IN. × IN. × LBS./FT.	LBS.	IN.^{3}	IN.^{3}	IN.^{4}	IN.	IN.	IN.	IN.^{2}	IN.	IN.	IN.	IN.^{2}
18 x 4 x 58.0 C	50.14	123.8	982.0	2,198.2	4.04	17.8	2.2	14.75	18.00	4.20	0.625	12.60
51.9 C	44.23	112.4	948.0	2,009.6	3.89	17.9	2.1	13.01	18.00	4.10	0.625	10.80
15 x 4 x 75.0 C	64.99	134.2	849.9	1,970.3	3.76	14.7	2.3	19.12	15.00	4.49	0.797	16.74
69.1 C	59.39	125.0	829.2	1,846.9	3.67	14.8	2.2	17.47	15.00	4.37	0.797	15.00
65.9 C	56.37	120.0	817.1	1,779.3	3.61	14.8	2.2	16.58	15.00	4.31	0.797	14.05
62.8 C	53.44	115.2	804.9	1,713.1	3.55	14.9	2.1	15.72	15.00	4.25	0.797	13.14
59.6 C	50.41	110.2	791.4	1,643.9	3.49	14.9	2.1	14.83	15.00	4.19	0.797	12.19
15 x 4 x 56.4 C	47.39	105.1	777.3	1,574.2	3.43	15.0	2.0	13.94	15.00	4.13	0.797	11.26
53.2 C	44.36	100.1	762.3	1,503.6	3.36	15.0	2.0	13.05	15.00	4.06	0.797	10.32
15 x 3 3/8 x 50.0 C	43.00	91.8	721.4	1,383.8	3.23	15.1	1.9	12.65	15.00	3.72	0.650	10.74
15 x 4 x 50.0 C	41.33	95.0	746.4	1,432.4	3.29	15.1	1.9	12.16	15.00	4.00	0.797	9.37
13 x 4 x 50.0 C	41.96	82.4	601.3	1,087.2	2.87	13.2	1.8	12.34	13.00	4.41	0.610	10.23
12 x 4 x 50.0 C	41.60	77.3	540.7	946.4	2.68	12.2	1.8	12.24	12.00	4.13	0.700	10.02
9 x 4 x 1 x 40.8 L	40.80	63.5	375.8	597.9	2.13	9.4	1.6	12.00	9.00	4.00	1.000	9.00
8 x 6 x 1 x 44.2 L	44.20	70.9	366.4	593.8	2.11	8.4	1.6	13.00	8.00	6.00	1.000	8.00

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